Gleanings in Bee Culture

Established 1873

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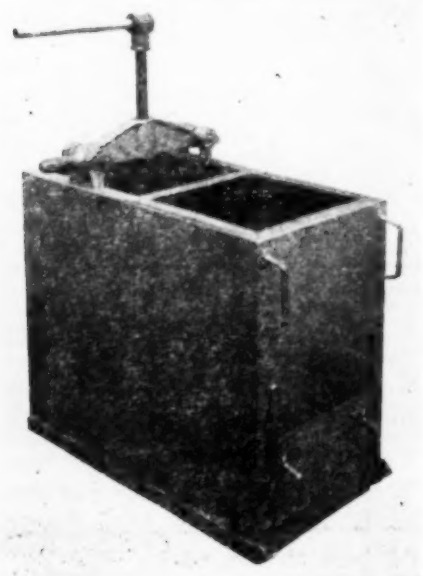

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The Monthly Honey Market

U. S. GOVERNMENT REPORT

Information from Producing Areas (last half of September).

California Points: Southern California.—Temperatures have ranged from normal to slightly above normal, with the weather generally clear except for morning fogs. Late composites have yielded pollen in the hill areas aind scattered patches of wild rape and garden flowers have yielded pollen and a little nectar in orchard areas. In the valleys off-bloom oranges are furnishing nectar, and both pollen and honey are being secured from mustard. Tamarisk is about through blooming in the Coachella Valley but a little nectar is still being obtained from alfalfa. Reporters in the San Diego region agree that the total output of Sage and Buckwheat averaged around 50 pounds per colony, or slightly above the five-year average. The weather has been ideal for bees and colony conditions are good in both the orchard area and the hills. Some strong colonies still have three to four frames of capped brood. Colonies should go into winter quarters in better than normal condition. Demand for honey has been fair to slow with little change in the price to beekeepers. In most areas offerings by beekeepers were fairly liberal. Sales by beekeepers in ton lots or more at Southern California delivery points—Orange, Water White 4¾-5¼c, Extra White 4½-5c, White 4¼-4½c; Sage, Water White 5-5½c, Extra White 4¾-5¼c, White 4⅜-4¾c; Sage-Buckwheat, Extra Light Amber 4 1/6-4⅜c, some 4½c, Light Amber $4.75-5.00 per case of 120 lbs. Sales at country points—Blythe area, Light Amber to Extra Light Amber Alfalfa $4.10-4.15, some $4.00 per case of 120 lbs. Beeswax has continued in slow demand, with the market level weakening and prevailing offers to beekeepers ranging 15-17c per lb. delivered Los Angeles.

Imperial Valley.—Sales reported of Light Amber to Extra Light Amber Alfalfa at $4.15-4.20, mostly $4.20 per case of 120 lbs.

Central California.—Temperatures have been somewhat above normal along the coast and near normal elsewhere. Light, scattered showers occurred over much of the area during this two-week period. The nectar flow is about over for the season except for blue curl and for jack clover, which is yielding well at this time. Bees are also working lightly on tarweed, sunflower and tamarisk. Most colonies appear to be in good condition. The market has been quiet, with buyers showing little interest except for current needs. Beekeepers have offered honey freely and many have accepted almost any prices offered, with distress lots rather numerous. More honey has been sold so far this season than up to the same date a year ago, indicating that beekeepers apparently prefer to dispose of their honey now rather than to hold it in anticipation of possible higher prices later. The market for most types of honey shows a weaker tendency. Sales by beekeepers in ton lots or more, per lb., delivered Bay Cities—White Sage 4¾-5c, some 5¼c, Light Amber to Extra Light Amber Sage-Buckwheat 4-4½c; Water White Orange, mostly 5½c; Extra Light Amber Bean, mostly 3½c; Light Amber Spikeweed 3-3¼c; Light Amber Mixed Flowers mostly 3c; Honeydew 2½c; delivered Interior Valley Points—Light Amber Mixed Flowers 2½c; Light Amber to Extra Light Amber Cotton 2½-3c cans returned; sales delivered Los Angeles—San Joaquin Valley Light Amber to Extra Light Amber Mixed Flowers 3⅛-3⅓c; Light Amber to Extra Light Amber Cotton-Alfalfa 3⅓-3⅜c.

Northern California.—Temperatures have been near normal except for being slightly above normal along the coast. Light, widely scattered showers reported both near the coast and in the mountain areas. The weather has been cool but bees have been gathering nectar lightly when weather permitted. Blue curl has been the chief source of the nectar recently. Bees are working Ladino clover lightly but the flow has nearly stopped. An excess of pollen is reported in most hives. Colony strength is normal, and broodrearing is still active, with stores ample. The market has reflected a weaker tendency, with distress lots selling considerably below general market levels. Although offerings have been liberal, buyers have restricted their purchases to stocks for current needs. Sales by beekeepers in ton lots or more, delivered Bay Cities—Thistle, Extra Light Amber to White 3½-3¾c, Light Amber to Extra Light Amber Alfalfa, mostly 3½c; Light Amber to Extra Light Amber Thistle and Mixed Flowers 3-3¼c; Light Amber Mixed Flowers mostly 3c; delivered Interior Valley Points—Thistle, Extra Light Amber to White mostly 3½c, Light Amber 3¼c, Extra White 4½c; Light Amber Manzanita 2½-3c; Light Amber Mixed Flowers 2½-3c; Amber Honeydew 2½c.

The market for beeswax has been quiet, with little demand reported. Good yellow wax has brought beekeepers 17-19c per lb. delivered Bay Cities.

Pacific Northwest: West of Cascades.—Fall rains have started, stimulating plant growth, and thistles, dandelions and pearly everlasting are again yielding nectar. Most colonies are now moved from the fireweed area and are in good condition. While extracting has not been completed the average from the lower portion of the fireweed area is not expected to be over 40 pounds to the colony, with yields reported all the way from 20 to 50 pounds or more. The quality of the Fireweed honey is below normal, with little honey grading lighter than white and much of it extra light Amber.

SUMMARY—Temperatures have been irregular in both the East and the West, but have averaged above normal for the period, giving bees a chance to fly and gather nectar from goldenrod, aster and other late plants where they were not killed by frost. Much of the northern portion of the country has had numerous frosts but as a rule they have not completely killed the latest nectar sources, and in many places gathering further winter stores is still possible. Unfavorable weather so curtailed the anticipated late flow in the upper portion of the White Clover Belt, however, that many beekeepers have already fed their bees or adjusted stores to provide for winter needs. Pollen supplies are reported ample on the West Coast, but are considered of doubtful sufficiency in much of the East. Late rains have relieved the drouth situation over much of the area between the Appalachian and the Rocky Mountains, greatly improving prospects that next year's honey plants can live through the winter. The color of this year's new crop is darker than normal over much of the Mountain States and a portion of the White Clover Belt. Occasion-

al States such as Nebraska, however, report more light-colored honey than normal. The spotted nature of the main flow has received further confirmation as late reports come in from beekeepers in different parts of the country. Beekeepers in northern Colorado, for example, report the best crop in 15 years, while beekeepers in parts of Montana, curiously enough, report the shortest crop in 15 years. Within a few miles of each other in Eastern Nebraska different beekeepers report a practical failure and an excellent crop. In no other recent year has the wide variation in crop output as a result not only of weather conditions but of proper beekeeping manipulations and practices been so apparent.

Demand for new crop honey continues to increase as the shortage of old crop honey prompts interest in the new honey, both by large buyers and in local markets. Especially in the Plains Area and in the White Clover Belt is a good demand reported, with substantial sales. Prices have been maintained at last year's levels or slightly below, but throughout the Middle West and East Central parts of the country many beekeepers report a better feeling and slightly higher prices than prevailed a month ago. Price variations in ton lots or more range up to 50 percent for what is apparently honey of approximately the same quality and in the same area. Variations in the selling prices of honey in small containers are even wider. Because of the short crop in Canada this year and the higher price that is assured across the Border, it is expected that shipments to Canada will be even greater than last season. Already numerous cars of honey in various parts of the country have been sold to Canadian buyers.

Monthly Report of Honey Producers

Early in October we sent the following questions to honey producers: 1. What is the final average yield per colony to date this season in your locality of (a) extracted honey? (b) comb honey? Give answer in pounds. 2. How does this compare with the average yield for your locality? Give answer in per cent. 3. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality, during the past month, for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 4. What are prices when sold to grocers in case lots of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, fancy and No. 1, per case? 5. What is the retail price to consumers in your locality for (a) extracted honey, in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) Comb honey, fancy and No. 1, per section? 6. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 7. What is the condition of the colonies for winter in your locality compared with normal considering the number and age of bees and the supply of stores? Give answer in per cent.

Oct. Date Rec'd.	State.	Name.	1. Final Aver. yield. Ex.	Comb.	2. Com-par-ison.	3. Large lots. Ex	Comb.	4. To grocers. Ex.	Comb.	5. To consumers. Ex.	Comb.	6. Move-ment.	7. Cond. of colo.
14	S-Ala	(J. C. Dickman)			100			.30		40		Fair	100
11	B. C.	(A. W. Finlay)	55		105	.10		.65		.85		Fair	100
10	S-Calif.	(L. L. Andrews)	50	0	100					.52	.18	Slow	100
10	S-Calif.	(Geo Larinan)	40	0		.05				.50		Fair	80
14	C-Calif.	(Davis Bros.)	130		145	.03¾				.37		Slow	100
14	SE-Colo.	(Otis E. Adcock)	75		40			.40	3.25	.50	.18	Slow	100
10	S-Fla.	(C. C. Cook)	50		60	.04		.35		.50		S'ow	90
14	C-Fla.	(Harry Hewitt)	45		75			.50		.65		Slow	100
9	SE-Ga.	(J. J. Wilder)	85	65	120	.05½		.45		.55		Fair	100
10	NC-Ills.	(A. L. Kildow)	120	0		.05				.50	15	Slow	100
14	S-Ills	(Carl E. Killion)	165	125	125	.05¾	3.10	.45	3.38	.62	.19	Rapid	125
7	NC-Ind.	(T. C. Johnson)	100	75	125			.50	3.00	.65	.18	Fair	80
7	NW-Ind.	(E. S. Miller)	45	25	180			.50	3.00	.65	.15	Slow	100
7	N-Mich.	(Ira D. Bartlett)	60		50			35	1.50	.49	.17	Fair	40
9	C-Mich.	(E D. Townsend)	60		60	.05½						Slow	100
10	E-Minn.	(Floyd W. Ray)	70	40	50	.05	2.75	.38	3.50	.45	.18	Fair	100
14	W-Minn.	(B L. Morehouse)	115		90	.05⅜		.42		.55		Rapid	100
14	C-Nebr	(J. H. Wagner)	60	30	50	.04½	2.15	.33	2.40	.39	15	Slow	100
10	W-Nev.	(Geo. G. Schweis)	80	40	70	.05	2.87	.35	3.00	.45	.19	Slow	100
17	W-N. M.	(C. A. Baltzley)	100		100	.06		45	3.60	.60	.22	Fair	100
14	NW-N. Y.	(Geo. B. Howe)	75	20	75	.06½	3.60	.50	4.00	.65	.20	Fair	100
7	C-N. Y.	(F. W. Lesser)	75		100	.06½		45		.50	.50	Fair	100
10	NW-N C.	(C. S. Baumgarner)		40	100			.75		.90	25	Fair	100
9	SE-N. C.	(W. J. Martin)	100	75	100	05¾	2.25	.55		.80	20	Fair	100
7	E-N. D.	(M. W. Cousineau)	50	0		.05		.30		.38		Rapid	Good
7	C-Ohio	(R D. Hiatt)	100	40	100			.48	3.60	.63	.19	Fair	100
11	NC-Okla.	(C. F. Stiles)	40		100			.45		.63	.18	Fair	100
11	W-Ore	(H. A. Scullen)								.38			100
10	C-Pa.	(Harry Beaver)	25	0	25	.05		.50		.60		Fair	90
9	SC-Pa.	(D. C. Gilham)	15	4	15			.70	4.25	1.00	.25	Slow	85
14	W-S. C.	(E. S. Prevost)	30	15	10			.19		.20		Fair	90
14	SE-S D.	(J. F. Norgren)	75		80	.05		40		.49	.14	Fair	100
9	C-Tenn.	(J. M. Buchanan)	40	25	50					.75		Fair	90
10	C-Texas	(T. A. Bowden)	75		75			.45		.55		Fair	100
9	S-Texas	(H. B Parks)	40		88	.05		.45		.50		Fair	90
11	N-Utah	(W. H Hendricks)	60		150			.43		.50		Slow	100
14	W-Vt.	(Phillip Crane)		35	85	.10	3.88	.65	4.25	.85	.28	Fair	100
10	N-W. Va.	(W. C. Griffith)	10	0	5					.50		Slow	75
7	SE-Wisc.	(N E. France)	63	25	75	.04¾	2.40	.35		43	.15	Slow	Fair
15	N-Wyo.	(Earl C. Reed)	75	40	50	.05	2.50	.40	3.00	.47	.18	Fair	100

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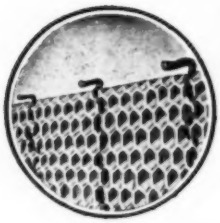

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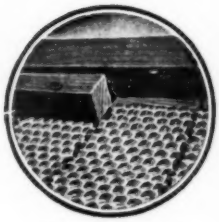

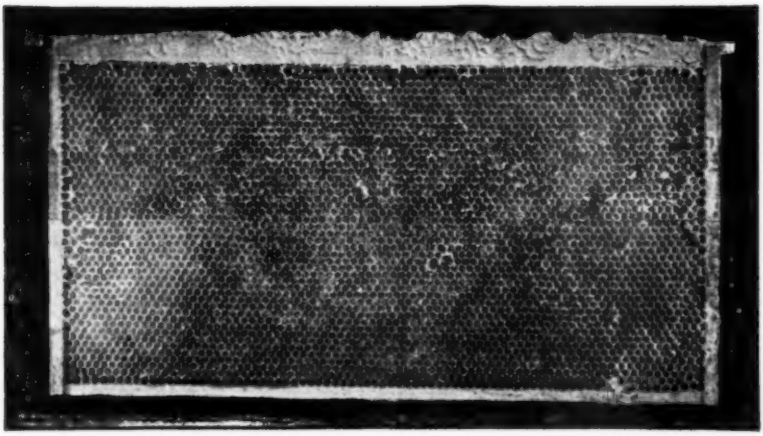

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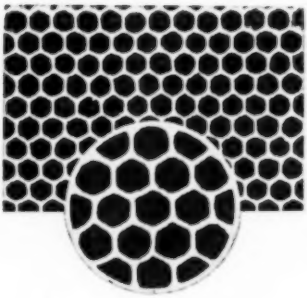

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Vol. 68
No. 11

Gleanings
in Bee Culture

November
1940

Fads in Wintering

By E. F. Phillips

Old Wine in New Bottles

A Personal Note: I was invited to participate in the symposium on wintering in the October issue but thought it best to decline, stating to my friend the editor that the wintering problem will not be settled by debate. To this comment the editor cleverly counters with a quotation from Joubert, "It is better to debate a question without settling it than to settle it without debate". Since we may as well get what fun we may out of this, my retort is that debate gets nobody anywhere, and the putting up of straw men to be knocked over is unprofitable. There are mis-statements in the symposium, but it is neither desirable nor profitable that I call any of the contributors to task personally, nor is it necessary to re-state the facts which some contributors included. I should still refrain from participation if it were not evident that great damage has already been done from some of the speculations in the symposium, and that far more damage will be done unless somebody punctures the theories. As will appear, the errors are chiefly the rebottling of old wine, much of it sour. We shall all agree that if the editor publishes this, he is a good sport.—E. F. P.

The confusion regarding the problem of wintering bees does not arise from information obtained by observing what the bees do, but it arises chiefly from human causes. It seems to be a common human trait to consider any facts which fit preconceived theories, and to disregard any other facts which are embarrassing. If, through habit, poor methods are being used, it is often easier to try to defend the methods than to change to better methods. Facing facts is about the most difficult task with which some people are confronted. To undertake to correct false conclusions is not easy, for it entails the bringing in of the facts which have been disregarded. There are some sound facts in the symposium in the October issue, and some wild theory. It is not possible within the confines of a single article to give full details of all the facts which must be considered, but at least some of them can be mentioned.

Colony Condition: It is misleading to assume that greater emphasis should now be placed on the condition of the colony for winter than was formerly placed on this vital point. When Demuth and I wrote on wintering, we stated these conditions in as strong language as we could employ, and much of this has been forgotten. Of course these conditions should be re-stated as often as necessary, but there is nothing new in that. The colony conditions for good wintering, not included in the symposium although insisted upon, are more than three pounds of young, vigorous bees reared at the close of brood-rearing, a queen capable of laying eggs enough in spring to bring the colony to full power in time for the first main honey-flow, enough good worker comb to contain the full quota of brood and to hold the supplies of honey and pollen which may occur in the hive at any time of winter or spring without disturbance, which means the capacity of two hive bodies of Langstroth dimensions. To these colony conditions are then added the stores, room and protection which the colony requires to insure safe passage through the period of adversity of winter, these three, no more and no less.

The Acceptance of Evidence: Mr. Manley expresses disbelief that bees maintain the temperature of the winter cluster by "moving violently", by "even fanning with their wings". Acceptance of such statements depends first on one's ability to accept the

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word of the reporter, and since I was one of the two (Demuth being the other) who observed and reported on this, perhaps I should feel hurt that Mr. Manley does not believe us. Scientific observations to be acceptable must be verifiable, that is, they must be so reported and described that the observation may be repeated by any competent observer under identical conditions and the same result obtained. That is the way in which the method of heat production by bees in winter was reported, and since then the observation has been repeated and the same phenomena observed by numerous others who have looked. The editor will recall that when he first read what we wrote, he too could not accept it, and so wrote to our mutual friend, Dr. C. C. Miller, but he will also recall that before the dictated letter left his office he had seen what we described and so reported in a handwritten footnote to the letter. That part of the Manley denunciation is printed in heavy type as if to emphasize it, which might be intercepted as indicating the editor's present unbelief in that method of heat production. Bees maintain the cluster temperature by muscular activity (with doubtless a meager contribution from secretion processes), and denial is not evidence. It would be interesting to learn by what other method it is imagined that a group of insects could produce the heat. This is the one instance in which it seems best to pick out one person for comment, but Mr. Manley is not justified in expressing an opinion without observations.

The Cost of Packing: The question is raised whether the cost of packing is justified by the benefits. Without at first discussing the benefits, the money outlay is almost nothing. Sawdust and shavings or chaff and fine straw, are available at little or no cost almost everywhere, and even if the insulating material must be purchased, the cost is slight. To hold the insulating material against the hive requires no more than some slater's felt, which will cost a few pennies per hive. Add to that a little string, a few pieces of lath and the entire expense is included. The total cost in money usually does not exceed the value of a pound or two of honey. The actual cost is almost all labor, and the beekeeper knows what his time is worth in mid-October (when all colonies should be packed where packing is needed) better than I do. If one wishes to go to the expense of a more permanent packing case, he alone can decide whether the added cost is justified by convenience and labor saving over the years, and no person can calculate that soundly for another. Neglect of colonies by failing to insulate them where they need it costs more in honey consumed in winter and often costs far more heavily in the honey which they do not collect the following year. No cost accounting will reveal the truth unless the probable losses in the honey crop are indicated, and these cannot be included correctly until the beekeeper has tested adequate insulation as a means of caring for bees in winter. Furthermore he must get experience with well wintered colonies, for many beekeepers do not know how to manage a strong colony in spring because they have never seen such colonies. The cost of packing cannot truthfully be indicated in dollars and cents from the cost of the materials used, and anybody who tries to do that is fooling nobody but himself.

Upward Ventilation: Much emphasis is placed on providing some sort of opening at or near the top of the hive to permit the escape of moisture-laden air, so as to keep the hive dry. This hoary theory was advanced and this practice advocated years ago, and years ago it was found useless or detrimental. The practice was formerly called "upward ventilation", and the commonest former practice was to place a porous quilt over the frames. The present style is to bore a hole in the hive. Since seemingly this straw man must again be knocked over, it is worth while to see what is back of it.

Bees produce water from the consumption of honey as food, and this chiefly leaves their spiracles as vapor. It remains vapor until cooled, usually by striking a hive surface which has a temperature below the dew point, the temperature of condensation of water vapor to liquid for a given relative humidity, and on striking such a surface, vapor condenses to liquid water. If there is no surface in the hive on which vapor may condense, it remains vapor, and in thoroughly protected hives it passes to the outside in that state, and the hive remains dry. The hive used in this country has the entrance at the bottom, and water vapor can pass out a bottom entrance without con-

densing inside if the hive is well protected.

If on the other hand the hive is unprotected, and especially if it is inadequately protected, the hive becomes wet from condensation and the bees winter poorly. To relieve the wetness, some beekeepers provide upward ventilation to permit the escape of moisture more readily, which must obviously be done at the expense of additional heat production by the bees. The liquid water in a hive in winter is virtually distilled water, but its presence may be harmful. At high relative humidities, the respiration of more water vapor is impeded, moisture accumulates within the bees and they behave as if they had dysentery. This condition should not, however, be confused with true dysentery which has a different cause. The important thing to observe is that wetness of the hive is visible evidence that the hive is inadequately insulated, and this is a large contributing factor in the poor wintering which is observed in wet hives. Elimination of moisture at the top permits the hive to dry out, but this is not proof that this is the right way to solve the problem. A colony of bees which rears brood in winter consumes more honey and thus produces more water, and is no coincidence that those who think winter brood-rearing desirable should advocate upward ventilation.

It seems unimportant to argue whether to use a porous quilt, a hole in the hive, a special entrance or any other form of opening for the elimination of water vapor, but the larger the opening and the greater the transfer of warm air to the outside, the worse for the bees. Bees have limited powers of neat production, definitely measurable from the amount of honey which they consume in winter, and they should not be called upon to generate more heat than is required to maintain a proper temperature in a well protected hive. They can of course do more than this by consuming more honey and by doing more work, but any practice which needlessly adds to heat production is ill-advised. Upper openings are unnecessary to keep a properly protected hive dry. If this is doubted, the question is at once raised whether the person raising the question has ever seen a well-protected hive, and some who contributed to the symposium give evidence that they have not.

"Locality" Again: I may be pardoned for stating that I got a good laugh from the revival of the old argument about "locality" differences. In years long since gone, it was the practice of many beekeepers to explain or to attribute differences in results obtained from certain beekeeping practices on the ground of locality differences. It then required the keen humor and the friendly sarcasm of Dr. C. C. Miller to stop that type of bad thinking, and we seem now to need another Doctor Miller. Nobdy will question that there are differences among the many places where bees are kept in the nature and amount of honey-flows, in the severity of winters, in other things pertaining to climate and to various environmental factors which affect the activities of bees. To use the term "locality" as a cover-all for such differences is unwise. The needed amount of insulation varies with the severity of the worst possible winter for the "locality", and the amount of stores to be left varies with the probabilities of the worst spring which the bees may encounter. These are differences based on sound observations, but to use the word "locality" in a geographical sense is misleading primarily to the person who uses it. There are no differences in the way that bees in New York respond to a given stimulus than do bees to the same stimulus in the Northwest, and the need is to state the environmental differences, not to attribute them to "locality". That word has become dangerous in beekeeping and may well be dropped, as Doctor Miller caused it to be dropped before our day.

"The Pollen Theory": Another perennial cause of confusion is the role of pollen in the hive in winter, and several erroneous theories have been proposed. Heddon years ago accurately observed that spottings from dysentery contain pollen grains or pollen shells. From this single fact he drew the erroneous conclusion that pollen is the cause of dysentery, and that to prevent dysentery all pollen should be removed from hives before winter. The conclusion which he drew from a truth did not work out well in practice, because his observation was only part of the truth. He removed all pollen from the hives and his bees did not contract dysentery, but his colonies were virtually worthless afterward. Incidentally his methods of wintering were poor,

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from his own descriptions. Pollen is not the cause of dysentery, but if bees consume pollen in winter, as they normally do not, dysentery usually or often occurs. This is not at all the same as Heddon's conclusion.

That some colonies of bees rear brood in winter is no new observation, and as the editor states, they have been doing this for centuries. Furthermore the conditions which call it forth are known, and it may be well to state them. It is often observed that nuclei do not discontinue brood-rearing when stronger colonies do in autumn, and they often continue this until the nuclei die. Colonies that are stronger than nuclei but still not strong enough for good wintering may discontinue brood-rearing about when strong colonies do (usually a little later), but when cold overtakes them in a few weeks, they may begin it again. Strong colonies may rear brood in winter if exposed to severe cold. Either strong or weak colonies which are wintered on poor stores, with the accompanying accumulation of feces, are apt to begin brood-rearing during the winter, the time of starting this depending on the rapidity with which the feces accumulate. If a colony is disturbed during winter by wind, by being kicked over by a cow or by being opened by the beekeeper, it will usually or often begin brood-rearing shortly thereafter. It is exceptional in more northerly areas for brood-rearing to begin in a moderately good colony before the middle of December from any cause, but if the stores are unusually poor, it may begin by about that date. After that approximate date, disturbance may easily set the colony off into this activity. It will be noted that all the disturbances listed as stimulating the bees to brood-rearing are undesirable conditions, and no desirable condition has yet been described which stimulates a colony to rear brood in winter.

The beginning of brood-rearing in winter is a response to well understood stimulation. When from any of the causes listed, the temperature of the inner part of the cluster is raised to the temperature under which brood is reared, the queen begins to lay eggs. If the rise of temperature is brief, she may not begin to lay, but if it is maintained for a few hours she begins. This is not evidence of intelligence on the part of the queen or of the bees, nor does it suggest that they know that spring will eventually arrive, but it is merely an unlearned response of the queen to a temperature stimulation. This may be brought about whenever the beekeeper wishes it, but it is a cause for rejoicing that ways are known whereby this may be prevented, and if it were not usually prevented, honeybees would doubtless long ago have ceased to exist.

After the first larvae (not eggs alone) appear in the cluster area, the bees of the cluster maintain a temperature high enough to protect this brood from cold as long as they are able to do so. Of course this heat production by larvae, pupae and adult bees requires the consumption of honey as fuel. If brood-rearing begins in winter, it is continued as long as possible if suitable food is available, until the colony dies or until relief comes by the oncoming of spring. Death results if brood-rearing starts early in places where flight does not occur. Brood-rearing either in summer or winter requires the consumption of honey and pollen, and the consumption of the additional honey and pollen results in a more rapid accumulation of feces, so that dysentery results if the bees are confined to the hive. Bees with dysentery always rear brood if they have a queen and pollen to feed the brood. Conversely I have yet to see a colony which was rearing brood in winter in places where confinement is long which did not have dysentery. Theoretically if flights are frequent enough to permit the bees to void their feces often, a colony in winter might rear brood and not contract dysentery, but this does not occur in the long confinements of winter in the northeastern states. For places where confinement is long, brood-rearing in winter is almost always fatal. The association between dysentery and pollen in the hive which Heddon noted is then not accidental.

At the time of emergence from the cell, a young bee has its rectum well filled with feces, resulting from the structural changes which occur during pupation. It already then has a running start toward dysentery, and the young bee will seek to fly within a few days. If prevented from flying, it not only gets into bad condition itself, but like all other bees with dysentery, it moves about and excites the cluster. Emergence of young bees in winter when flight is impossible results in high cluster tempera-

tures and much excitement in the cluster. This is an aggravation to the tendency to dysentery which accompanies winter brood-rearing.

The idea that pollen is needed in the hive for winter use rests on the incorrect assumption that brood may be reared in winter with safety. Years ago the editor of Gleanings reported feeding bees in a winter cellar to stimulate brood-rearing, and he will doubtless recall the disaster which overtook the colonies. Adult bees do not use pollen in winter unless they are rearing brood, hence the supplying of pollen for winter use is an effort to encourage a reaction by the bees which is to their detriment.

Another aspect of the modernized pollen theory, as contrasted with the ancient pollen theory of Heddon, is the assumption that it is feasible to provide extra pollen for the winter colony. If the beekeeper desires to provide more pollen, one of two things may be done, get more pollen somewhere or provide a substitute. He might employ some southern beekeeper to rob his own bees of needed pollen, but that neither of them can do economically, and the scheme is impractical. Or he may get some additional pollen and dilute it with a substitute, still not within reasonable expenditures.

There is so far no complete pollen substitute. It was once believed that bean meal, pea meal and various sorts of flour are substitutes for pollen, based on the observation that bees collect them as they collect pollen. Later tests showed that these materials are not effectually used as pollen is used and that they are usually thrown from the hive later. Dr. M. H. Haydak has recently done excellent work along more scientific lines in seeking a pollen substitute or supplement, and the chief benefits from his work so far have been valuable facts about nutrition. Since at present the beekeepers cannot at any justified expenditure get more pollen than his bees gather, and since there is no complete substitute, there seems to be nothing that he may reasonably do to give bees an extra pollen supply for winter.

Colonies finally begin brood-rearing from normal causes, which are the incoming of nectar or pollen or both when the bees collect from the earliest flowers. This obtaining of new supplies is a normal stimulus to brood-rearing. So far as the queen is concerned, egg-laying begins from about the same stimulus, and again we cannot assume that she is exercising intelligence. When the cluster is loosened or broken at the time that the bees fly out to get the first incoming food, the temperature of the hive is raised to the point at which the queen responds by laying eggs.

It seems by those who advocate winter brood-rearing to be assumed that when this occurs the colonies reach full strength early, but the opposite is usually true. Colonies which winter well and which rear no brood until the first flowers open then begin an increase in colony population which is amazing. A colony which rears brood too early usually makes a much slower and longer climb to full strength, as has been attested by observations over a period of years. These observations pertain chiefly to those places in which flights are rare or non-existent in winter and where dysentery almost invariably accompanies brood-rearing. In such areas, winter brood-rearing actually results in smaller colonies at the time of the honey-flow. That bees are able to withstand abuse and sometimes to survive winter brood-rearing is not an indication that either is desirable.

Losses of 1939-40: Last winter was a disaster to many beekeepers, indicated by the reports for Ohio given in the symposium. New York beekeepers also lost too heavily, the losses in this State being about 75,000 colonies. Those New York beekeepers who followed approved methods of wintering lost no colonies except occasional ones which became queenless or which died of the minor causes which cannot be anticipated, and their total losses were low. Data published for several years past for Ohio indicate that an exactly similar condition has prevailed in that State. Those who last winter neglected their bees lost heavily all through the eastern states, as such careless beekeepers commonly do when winter is severe, but the negligent beekeeper is not much good to himself or to the industry. The lamentable aspect of the losses of last winter is that good beekeepers who had been misled into acceptance of advice like that in parts of the symposium also lost heavily. Those who were misled into thinking that scant packing or no packing is all right, who were misdirected into using upper entrances

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and those who were led to believe that brood-rearing in winter is a normal and desirable thing, these were the beekeepers who lost heavily. That places the responsibility for those losses squarely on the shoulders of those whose advice they accepted.

Conclusion: When competent scientific observers show that the accepted information about the behavior of bees in winter is incorrect, this may call for changes in practice, but such observations are not yet made. When practical tests in the apiary show that the approved methods give results less good than some newer method, that will call for change of practice, but such tests are not yet announced. What we now have is speculation as a suggested basis for change, and the speculation is based on inaccurate observations, mostly a rehash of old stuff.

Older beekeepers will recall what a struggle it was to induce anybody to winter bees in a two-story hive. Speculation at the time undertook to prove that it was impossible, but gradually beekeepers tried it, and gradually they established their beekeeping on a sounder basis. Along with the use of the two-story hive came the providing of abundant stores, room and protection, which was shown both scientifically and practically to give the results which are needed to stabilize beekeeping as an industry. Since the introduction of these methods, beekeeping has advanced remarkably as an industry, and there are now many more commercial beekeepers than there were before. Certainly it is not an advance in honey prices which has brought this about. It does not seem desirable to undertake an overthrow of methods which have given such results on speculative whims.

The world today is a tough one in which to live. None of us knows what conditions may arise which are beyond our control and which may seriously affect our beekeeping and our lives in other ways. From the mere standpoint of expediency, this is no time to promote untried and confusing methods.

Frankly, this is not written merely because my old friend the editor asked for it. I am always glad to do what he asks, but it was also requested from other sources. Some of my friends in neighboring states who are engaged in teaching and extension have been disturbed by the promotion of speculations on wintering, have seen the unnecessary losses caused to beekeepers by acceptance of these theories and have felt the necessity of having the theories exposed. Some of them have appealed to me to do all that I can to warn beekeepers, especially in the areas of long winter confinement, not to risk terrific losses by accepting such speculations as tested methods. I have promised to do what I can, and now I have done it.

It seems necessary to condemn these fads, not as new things but as old practices dressed up in modern garb. I want to repeat that the symposium contained many accurate statements, and any informed beekeeper can find them without my aid. I want also to state as strongly as possible my conviction that nobody wants to harm the beekeeping industry by promotion of such ideas, and no personal condemnation is desirable or in the slightest degree intended. Bad thinking and bad advice should always be condemned, and the further word of warning against irresponsibility in passing out untried advice is all that is needed to close this off.

Woodpeckers and Bees Strike Up Partnership

By John R. Hancock, Dallas, Texas.

We are in receipt of authentic information stating that woodpeckers are going ahead of bees in North Carolina boring holes in dead trees for the bees to inhabit. It may be something new in the building line, but some woodpeckers came along and drilled holes in the columns of houses and very soon some bees swarmed by and spotted the holes and began storing honey inside of the colums. No doubt the woodpeckers have been of great assistance to the wild bees in finding homes for transient swarms searching for new quarters in the forests of our country. Every one who knows anything about bees knows that scouts go ahead of the swarms and locate future homes for the colonies. In this way the woodpecker and bees work hand in hand.

Pollen by the Bushel

By E. R. Root

How Pollen Reserves are Correlated with Good Wintering

Yes, pollen by the bushel—that is what good colonies are able to produce to help out other colonies where there is a deficiency in the fall or winter. This is not wishful thinking but an actual realization of what has been done and is being done by the bee culture laboratories at various points in the United States under the general supervision and direction of Jas. I. Hambleton of the Bureau of Entomology, Washington, D. C.

This work, it is believed, will bring about a new epoch in beekeeping by which we shall not only produce stronger colonies for the crop but bring about better wintering in a constant accession of young bees by winter brood-rearing to make up for old bees constantly dying off.

Under the old orthodoxy, it was believed that there should be a minimum of pollen and plenty of honey, or syrup, to keep down brood-rearing during winter. The new orthodoxy of pollen is quite the reverse—a large amount of natural pollen—the more the better—during early fall and winter.

There should be, according to the Government workers, from 500 to 600 square inches of pollen in the fall or the equivalent of from four to five well filled pollen combs. Such an amount, according to the old teaching and practice, would not only be impossible but unnecessary. In the early eighties of the previous century it was argued that there should be little or no pollen in the hive during fall and winter because, forsooth, it would cause dysentery. and death to the colonies.

Late scientific work now shows that pollen is not the cause of dysentery; that this disease or malady is due to too much moisture in the food or to food of inferior quality or a cluster too weak. Late work on the part of the government workers at Baton Rouge, La., Davis, Calif., Lar-

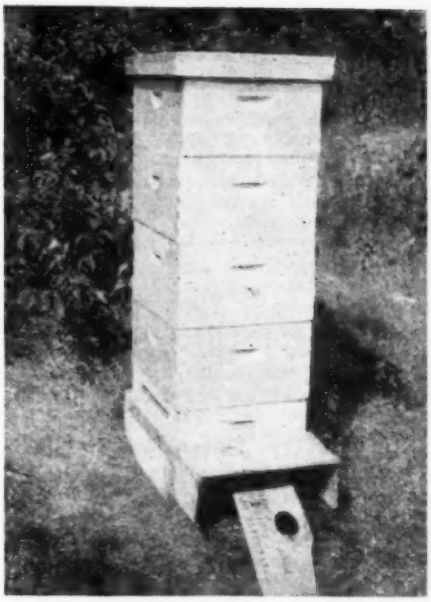


Fig. 1—A pollen-gathering colony with a pollen trap at the bottom.

Fig. 2—Another pollen-gathering colony with Dr. C. L. Farrar holding a tray of pollen removed from the colony and in the left hand an extra pollen trap with the tray in position. The cardboard pan in the foreground contained 30-35 pounds of dry pollen.

amie, Wyoming, and Madison, Wis., show "that the surviving populations of over-wintered colonies are closely correlated with the amount of reserve pollen available in the fall". This simply means that colony strength in the spring is dependent on the amount of pollen in the fall. The greater amount of pollen, other things being equal, the greater the number of bees for the crop. The size of the yield per colony as every one knows is in direct proportion to the number of mature bees to gather and ripen the crop.

On page 567 of our September issue we have shown the importance of pollen reserves and brood-rearing during mid-winter and now the question is how to

Trap this Pollen Reserve

The government men have devised a pollen trap that scrapes off or removes the pollen pellets from the hind legs of field bees just as they come in from the fields. It consists of a metal housing that fits onto the entrance of a strong colony, as in Fig. 1. Inside of this housing and just in front of the entrance is a 5-mesh wire screen, a mesh just large enough to let the field bees into the hive but small enough so that it scrapes most of the pollen from the legs of the field bees entering the hive. Fig. 3 shows the pollen and the trap that fits onto the entrance as in

Fig. 3—Pollen box of gathered pollen, wire screen, and pollen in the right hand after they were taken from the trap.

Figs. 1 and 2. The roof of the housing projects over the screen to protect the gathered pollen from rain and shut out the direct sun's rays. Just below the pollen screen, Fig. 3, is an oblong box to catch the pollen as it drops off the legs of the bees. An 8-mesh wire screen covers the pollen tray. These boxes or trays are emptied daily into large cardboard trays for drying, as shown in the pan in Fig. 2.

The traps do not catch all the pollen but a very large percentage of it. It appears that literally bushels of pollen can be trapped in this way the same to be used later. The leg-

Fig. 4—Dr. C. L. Farrar with his two assistants standing near one of their colonies operated on the two-queen system of beekeeping with upper entrances in between.

ends in fine print under the illustrations will explain the detail further.

The surplus pollen is made up into thin cakes, one-fourth natural pollen and three-fourths soy bean flour with enough syrup to hold the mixture together. The result is shown in powerful colonies that are ready to catch the nectar. See Fig. 4 which is a sample of many other colonies.

The writer has seen the effects of these large pollen reserves in powerful colonies in the Government apiaries.

It will take years to get the new gospel of wintering and honey production across.

The lesson right now is to make sure your colonies are liberally supplied with pollen combs as well as with combs of sealed honey. Trapped pollen when supplemented with 75 per cent soybean flour provides a means of increasing brood production early in the spring if natural pollen reserves are lacking. It also provides a means of insuring brood production in package colonies when inclement weather prevents the collection of pollen from the field.

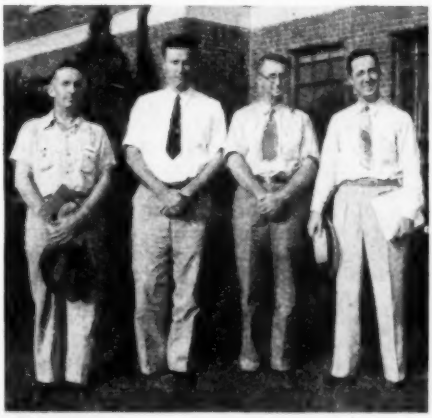
The heavy winter loss in Ohio, as Reese points out on page 703, this issue, was due more to a shortage of pollen and honey in late fall than to winter's cold. The combination of extreme cold and pollen and honey shortage made Ohio's winter loss large.

The Short Course in South Carolina

By D. Dunavan

The second Beekeepers' Short Course was held at Clemson Agricultural College on August 28 and 29. A total of 42 beekeepers from all sections of the state registered for the course. Several Georgia beekeepers also attended the two-day session.

Instruction was in charge of Professor D. Dunavan of the Entomology Department of the College. Encouraging and inspirational talks were given by Dr. R. F. Poole, President of the College, Dr. D. W. Watkins, Director of South Carolina Extension Service and Dr. H. P. Cooper, Director of the South Carolina Experiment Station. Out-of-state speakers were A. V. Dowling, Apiary Inspector of Georgia and J. J. Wilder, beekeeper of Waycross, Georgia.



Left to right: W. H. Armstrong, Anderson County; C. E. Hembree, Newberry County; J. D. Foster, State Ass'n. President; R. L. Boggs, Oconee County.

The South Carolina Short Course group. Aug. 28-29, 1940.

A special feature of the Course was two brain twister question contests on beekeeping. Winners of these were F. L. Marlar, Greenville; J. G. Freeman, Pickens; C. T. Bryant, Central and J. T. Mattison (colored) of Honea Path.

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Streamlining the Top Entrance

By J. F. Norgren

Since there is no point in my contributing to the already overwhelming arguments in favor of the top entrance for winter I'll confine my words of approval to a couple of indirect hits for the sake of comparison.

The good old laws of nature play no favorites. It is up to earth's creatures to conform to those laws to the best of their mental ability. Top-entrance advocates point with satisfaction to the wild creatures which live through the winter. All of them use a top entrance. Although they may almost plug the burrow shut they leave a small opening from which carbondioxide and excess moisture is released. Though we harry them with gun, trap and poison they still live on because they can lick the weather with a top entrance.

Every live-stock grower who practices housing animals under close quarters during severe winter weather knows enough to provide his barns with top ventilation through cupolas or just plain holes cut in the walls under the ridgepole. If he thoughtlessly disregarded the teachings of his fathers, then he likely learned through costly experience that live-stock cannot thrive in close quarters without sufficient ventilation. Foul air heavy with moisture from exhalation has time and again taken toll in herds through contracted pneumonia, or other diseases brought on by lowered resistance.

When you stop to think of it, top ventilation is nothing new to beekeepers for the principle is always employed in bee cellars. Would cellar wintering of bees have proved satisfactory had upward ventilation not been provided in bee cellars? I believe the use of that principle contributes as much to the success of cellar wintering as anything. Then why shouldn't we try to emulate the conditions existing in a properly constructed bee cellar, when packing colonies outdoors?

This article proposes to explain the advantages of a particular type of top entrance—the metal cover entrance. It possesses the qualifications of every other type of top entrance, I think, with none of their weaknesses. Its advantages are manifold.

In the first place, we already have, or should have, metal covers and inner covers. No extra equipment is needed. There is nothing to buy except a ⅞-inch rim to be nailed around on the inside of the metal cover. This rim rests on the inner cover to provide a weather-proof beeway between the covers. This space, extending over the entire top of the hive, becomes an "enclosed porch" with the outer entrance through the rim and flange of the metal cover and the inner entrance through the escape hole in the inner cover. This inner entrance, being normally directly above the cluster, is the most accessible point from which bees may regulate hive temperature and humidity.

Secondly, the metal cover entrance is in place at the highest possible point of the hive. It is definitely a top entrance. One cannot classify a hole in the side of a hive body as a top entrance without stretching the truth unmercifully.

Thirdly, when the entrance feature of the metal cover is not in use it may be plugged solidly with a wad of burlap shoved in with the hive tool to become positively bee-proof.

When weather becomes warm in late spring it is desirable to give colonies a small amount of thorough ventilation. Then the burlap plug may be removed from the metal cover entrance to permit a downdraft through the hive. (I believe thorough ventilation is important in forestalling an early desire to swarm.)

Top Entrance for Queen Mating

The metal cover entrance shines again when used for mating queens above colonies. No extra equipment is required for establishing these mating colonies except a piece of fine hardware cloth which is thumbtacked over the escape hole of the inner cover. Place a hive body of bees and brood with a ripe cell over the inner cover and an entrance-equipped metal cover on top and we're off to a good start for a vigorous young queen. A small block should be tacked under the metal cover entrance as an alighting place for the young queen when she returns from her flight. I used this system of mating queens the past June and the results were pleasing.

Above: Packing with metal cover entrances January 6, 1940. Ten colonies facing the four directions are placed in each pack. A ring of woven fencing holds the straw in place around the hives. The completed pack at the left was made with rye straw which held its shape perfectly despite snow and rain.

Left: Mating queens through metal cover entrances. The hive's inner cover, with escape hole screened, separates the original colony from the mating colony. When the young queen (above) has proved to be a layer she may be united with the lower colony after killing the old queen.

There is a common practice, I believe, of boring holes in hive bodies to effect a top entrance and I derive savage glee in criticizing that practice. As it is not at the highest available point of the hive it falls short of its purpose. Since bees do not normally cluster around end-bars of combs it would be difficult for the cluster to come in contact with such a hole in order to fan out the pool of moist, bad air which would float above the hole. An opening through the single wall of a hive is not weatherproof. It seems possible that snow could blow in through such an opening.

But worst of all, boring holes in hive-bodies is flagrant mutilation of good equipment. Say we bore a hole in the upper of a two-story hive this fall. In the spring we will want to switch chambers to get the brood at the bottom and start the queen on an upward surge of egg laying. In the fall it will be easier to bore a hole in what is now the upper chamber than to switch back, so we bore. If we use full-depth supers eventually some of them will be interchanged with brood chambers and so more holes must be bored until in time, all our hive bodies will have holes.

When the day comes that we have to move a yard, some of the corks or patches over these holes are apt to be rubbed off, consequently we'll have bees in our hair and pockets. Furthermore, with holes in our supers, some day we may find a whole stack of honey robbed out.

Equipping the metal cover with an entrance requires work with a bit and brace, a jacknife, and a saw for cutting and notching the inside rim. I have thus equipped my eighty covers—one for each colony I own—and although it is something of a job I find it has been well worth the effort.

Winter Packing

As to the matter of winter packing I am not giving advice because I'm not so sure what is right. However, I stand at odds with advocates of light packing because I believe heavy packing most nearly approaches the conditions of cellaring which is possibly the most successful way of wintering. Heavy packing keeps temperature change inside the hive at a minimum with less bee activity and honey consumption as a result. These points are all characteristics of cellaring.

The argument that light packing permits the sun to warm the hive during the day sounds pretty thin. What about the nights? Rapid warming and cooling of the hive demands rapid expansion and contraction of the cluster. Bee life can best be preserved by as near a state of dormancy as possible during the inactive season.

I pack with from six inches to a foot of straw underneath and around

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XUM

Preparing Colonies for Winter

By Grant D. Morse

Unnecessary Losses Can be Avoided by Beekeepers if They Follow Scientific Procedures in Making Colonies Ready for Winter

Winter tests your skill as a beekeeper. What are some of the details you must make sure of if your colonies are to come through the ordeal of winter in good condition?

Not fewer than three chief details must be cared for. In order to keep them clearly outlined, I'll treat them under three main heads: first, the condition of the bees; second, the state of the supply of winter food; third, methods of packing.

The Condition of the Bees

To be ready for winter the colony must be strong enough in numbers to keep itself warm, protect its queen, and have bees left when spring comes to carry on the business of the hive. The first fall frost is a good time for determining whether the colony has this strength. A colony that has fewer than five frames of bees is not likely to live through the winter, although I have seen three frames of bees in a nucleus box (half-hive size) come through the winter nicely and build up to full strength. Ordinarily a colony weak in numbers is not worth bothering with. Usually it will be best to unite it with another colony. The one that has the better queen should be placed over the other by the newspaper method and left until they have united. Then the empty combs can be sorted out and the united colony reduced to one hive body. Often a weak colony in the fall may be headed by a fine queen while some neighboring colony of near full strength possesses a mediocre queen, or an old queen. At frost time if the old or inferior queen is killed by the operator and the weak colony headed by the fine queen united with it, the resulting colony is likely to be far more valuable than the two colonies would be separately.

The strength of the colony must be determined by the operator not only in terms of the number of bees present, but also by the quality of the queen. The quality of the queen will ordinarily be indicated in several ways: her own age and appearance are important; more important still is the question of whether she is producing. Her producing powers are almost invariably evident from the quantity of brood she and her bees have mothered. Even as late in the fall as the first frost, there should be considerable capped brood present, also some newly-laid eggs in the hive. The color of the young bees and their disposition also deserve some observation in helping determine the value of the mother queen.

The chief reasons for insisting upon a colony's being numerically strong are (1) a weak colony, unless perfectly protected, cannot defend itself against the rigors of freezing temperatures and chilling winds; (2) it cannot properly protect its queen against the same rigors; (3) it is left so depleted in power in the spring as to be unable to build up to producing strength by the time the honey flows begin; (4) it is incapable of generating heat sufficient to make it possible for the cluster to move during low temperatures to a new location in the hive where honey is available. Unless the colony is numerically strong, one hive body will probably be a better place for the bees to winter than two hive bodies.

In speaking of a cluster protecting its queen, I am reminded of one colony I saw this last spring in which fewer than a dozen working bees remained alive, but the queen was still present. It had been of full strength in the fall and the fact that the queen was still alive in the spring when fewer than a dozen workers survived testifies, I think, not only to the hardiness of queens in general, and of that queen in particular, but also to the obvious factor of protection by the workers of their sovereign.

The State of the Supply of Winter Food

The supply of honey and pollen in the hive when the first killing frost comes should be, ideally, between forty and sixty pounds in weight. Less than this will ordinarily not feed the bees through the winter,

provide food for brood raising in the spring, and maintain the life of the colony, young and old, right up to the time a honey flow of reliable proportions arrives. I have seen few queens that could use up more than eighty-five pounds of honey and pollen between the time of killing frost in the fall and the clover honey flow in June. To have old honey left in the hive when the new crop is being brought in, leaves the operator faced with a problem. He does not want the two mixed. If he puts the old honey "down stairs" the bees will likely carry it up.

The brood supply should ideally be compact rather than scattered through the hive bodies. Often the colony might better be reduced to one hive body well stocked at frost time than be expected to forage through a larger space.

Much has been written about the quality of winter stores. Experience confirms the claim that some honeys are much better than others for winter and spring consumptions, due doubtless to the bees' inability during cold weather to relieve their digestive organs of the disturbing contents. For this reason, operators who really insist upon being assured that their colonies will winter well, frequently feed sugar syrup late in the fall, particularly in those seasons when the late flow comes so close to frost as not to give the bees time to ripen the honey well before sealing it.

Ordinarily it would appear that the operator need not worry about pollen supplies being unavailable if the colony has been able to gather its own honey stores. Usually accompanying pollen supplies will be gathered by the bees who appreciate its value fully as much as, if not more than, the operator.

Methods of Packing

To pack or not to pack? Packing is expensive and time consuming. If it can be avoided, so much the better. Even in rather cold winter climates, such as those that prevail in Ohio or New York State, many operators in favored altitudes can obviate packing by placing the hives in protected places. But a few trees or brush, or a sheltering hill slope are not always enough to provide proper protection. A well constructed fence helps. Placing the colonies among evergreen trees that grow closely together is often all the protection that is necessary. But it is rather certainly a fact that protection of some kind is preferable to enable colonies year in and year out to function at optimum levels.

Where the operator believes that some protection besides a wind break is needed, he has several types from among which to choose. I shall not endeavor to enumerate all of them. They include a cellar, a multiple packing box, a single packing container. I like the last of the three best because among other things, drifting is not encouraged, the bees retain a fixed location, the same southerly exposure throughout the year is made possible, and disaster to one colony does not ordinarily affect another (except, of course, in cases of disease).

The packing box should not be too large, otherwise so much protection is afforded that the cluster does not feel the warm sun rays in midwinter in time to take a cleansing flight. Two or three inches of packing on all sides of the hive except in front would seem to be about right. More may be used to no disadvantage on top or bottom. But an inch or so in front is sufficient. Experienced operators are somewhat agreed that except in the most severe temperatures, moderate insulation—enough to nullify the more severe effects of air currents—is sufficient protection.

But mere packing is not enough. I have seen colonies that went into winter quarters with a force of bees that would have weighed as much as nine pounds or more, and with a store of more than one hundred pounds of honey and pollen, die inside of a luxurious packing box while a neighboring hive not so populous, nor so rich in stores, wintered well without any packing whatsoever.

Two factors, besides all those mentioned previously in this article, play an important role in successful wintering of bees. They are (1) ventilation and (2) the entrance. The two are largely one problem, though not entirely so, for I am convinced that during the past winter many colonies perished merely because, having only one exit—namely the usual one at the bottom of the hive—this exit became so clogged with dead bees during the extended cold periods when bees could not fly, that when warm days did arrive the bees that were alive could not work their way out through the dead mass on the bottom-board. This can and does hap-

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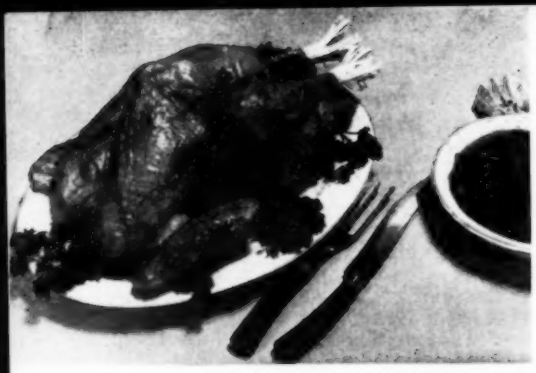

Browned to a turn, crammed full of honey-flavored stuffing and flanked with honey-sweetened cranberry sauce. Um-m!

For the Thanksgiving Dinner

By Mrs. Benj. Nielsen

The Use of Honey in its Preparation is a Blessing to the Busy Homemaker

Over 300 years have passed since Bradford, the good governor of those sturdy Pilgrims, sent fowlers forth to snare the wild turkey to increase their scanty fare on that first Thanksgiving Day. It seems altogether fitting and proper that the turkey, a domesticated version to be sure, should still dominate the table on this great American feast day. The procedure however is quite reversed —we get our bird first and then plan our dinner around his majesty, making our choice from the limitless foods this blessed country offers us.

Whatever your list of the supporting cast may contain do plan on having a number of honey-way stars. Indeed honey is a veritable boon in the preparation of the feast for this All-American holiday. Recipes may be worked out the day before, sometimes even more in advance, and that good old honey flavor goes right on working to make these treats even more delectable than we dreamed possible. Another blessing to be added to the long list we have to be thankful for! Pre-cooking and day-before molding are two leading tricks guaranteed to lighten the peak load of holiday preparation. Both are easily possible with the aid of the old honey jar. And the cook sits down at the table without that too-tired-to-eat feeling, and moreover, eager to tackle the usual festivities of the day.

The preparation of our last year's Thanksgiving Day dinner was the easiest and least wearying ever and the family unanimously voted it the best ever. If you have refrigeration, or access to a suitable cool place, do try the method I used in preparing your turkey this year. I can promise you will not be sorry. On the second day before Thanksgiving I stuffed our bird with a honey flavored stuffing, packing it lightly to allow for expansion in cooking. We were delighted with the rich full flavor of our honey dressing. This extra time gives flavors a chance to blend. I trussed our bird well and let it stand in the refrigerator until cooking time the next day. Then I rubbed the skin with melted fat and placing the turkey on a rack in an open pan, I covered it with several thicknesses of white cloth dipped in and wrung out of melted fat. I slipped the pan into an oven pre-heated to 300 degrees F., cooking it until about two-thirds done, then letting it stand until the next day (not refrigerated). I finished the roasting process Thanksgiving morning. Easy and oh so good!

If your bird weighs 15 pounds or over an oven temperature of 275 degrees is most satisfactory. For a turkey 6-10 pounds (weighed after stuffing) allow 20 to 25 minutes per pound, if 10-16 pounds allow 18-20 minutes and 15-18 minutes for an 18-26 pound bird. Roasted in a heat-controlled oven turkey requires little attention. However, an occasional basting with the pan drippings insures moist meat and good browning. Covering with the fat-treated cloth prevents too rapid browning of wings, breastbone and legs.

Potato Nut Stuffing

Three pounds ground pork, ½ cup diced cooked potatoes, 2 hard-cooked eggs, chopped, 1 cup chopped celery, ½ cup raisins, 1 cup chopped pecan nutmeats, ½ cup stuffed olives, chopped, 3 bay leaves, crushed, ¼ cup honey, sage, salt and pepper to taste. Brown the pork in a small amount of fat. Combine with other ingredients blending well. This amount will stuff a 10-12 pound turkey.

If the budget will not stretch far enough to include a turkey why not have a tempting richly browned honey glazed whole ham? The tangy flavor of smoked ham combines well with the fall fruits and vegetables and with its rich honey glaze it is something to be considered! With the mild cures given hams these days, no parboiling is necessary. Simply place the ham, fat or skin side up, on a rack in an open pan and bake in a slow oven, 300 degrees F. If the rind was not removed when the ham was purchased, this may be done shortly before the ham is done. The rind becomes loosened in cooking so it is necessary only to lift it off and return the ham to the oven to brown. Then rub the surface with honey and return it to the oven to glaze. Decorate with diagonal rows of almond halves and orange slices and you have something that calls for seconds.

To get back to our last year's Thanksgiving dinner—our cranberries were cooked the day before, sweetened with honey as soon as they were removed from the heat, then allowed to chill until the next day.

Good dietitians frown upon the repetition of a food in the menu. I committed the cardinal sin of repeating the cranberry note in our molded salad. But it was so delicious and the brightening berries so decorative we didn't mind a bit.

Molded Cranberry Salad

One pound cranberries, 2 stalks celery, ⅓ cup prepared horse-radish, ¼ cup honey, 1 package lemon flavored gelatine, and 1 cup hot water. Run cranberries and celery through a food chopper. Add horse-radish and honey and mix well. Stir into the gelatine dissolved in the hot water and chill in mold until firm.

Instead of the honey-sweetened cranberry sauce perhaps you would like this tasty

Cranberry-Pineapple Relish

Four cups cranberries, 1 lemon, 6 large slices canned pineapple, and 1¼ to 1½ cups of honey. Wash cranberries and drain well. Quarter lemon. Put cranberries, lemon, and pineapple through a food grinder, using the medium blade. Add honey and mix well. Chill thoroughly before serving.

Crisp tender rolls were reinforced with piping hot honey-sweetened coffee. It's no trick at all to hold the molded dough in the refrigerator then bake the rolls while preparing the giblet gravy and adding the last-minute touches to the dinner.

Whole Wheat Honey Rolls

One and ½ cups potato water (potato added to it), 1½ cups lukewarm water, 1 package granulated Maca yeast, ⅔ cup shortening, ¾ cup honey, 1½ teaspoons salt, 4 cups sifted all-purpose white flour, and 4 cups whole wheat flour. Put one medium sized potato and the water in which it was cooked through a sieve. This should measure 1½ cups. Soften the yeast in the lukewarm water. Add shortening, honey, and salt to the hot potato water. Cool to lukewarm. Add softened yeast. Stir in enough flour to make a soft dough not as stiff as for bread dough. Knead until smooth and elastic. Let rise in warm place until double in bulk. Punch down

Have some molded cranberry salad?

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The first slice of the Thanksgiving turkey goes to Don.

and let rise again. Pinch off small pieces of dough and mold into rolls. Place on a well greased baking sheet and let rise until very light. Bake in a hot oven, 400 degrees F., for 20 to 25 minutes. Remove from pans at once.

I'll have to admit no honey was used in our fluffy mashed potatoes—we treated them most liberally with rich brown giblet gravy. But our minted peas were stepped up with just a bit of honey for proper flavor emphasis.

Our honey pumpkin pie was prepared the day before. It is another one of those recipes guaranteed to aid in avoiding that last minute rush.

Honey Pumpkin Pie

One cup honey, 1½ cups pumpkin, cooked or canned, ½ cup rich milk, 3 egg yolks, ½ teaspoon salt, 2 teaspoons cinnamon, ½ teaspoon ginger, ¼ teaspoon allspice, 1 tablespoon Knox Gelatine, ¼ cup cold water, and 3 egg whites. Combine half of the honey with the pumpkin, add milk, slightly beaten egg yolks, salt, and spices. Cook over rapidly boiling water until the mixture begins to thicken. Soften the gelatine in the cold water and add to the hot pumpkin mixture. Stir until the gelatine is dissolved. Cool. Beat the egg whites until stiff but not dry, then beat the remaining honey in gradually. When the pumpkin mixture begins to congeal fold in the egg whites. Pour into a previously baked pie crust or a graham cracker crust, and chill until firm. Serve with honey-sweetened whipped cream.

Graham Cracker Crust

Eighteen graham crackers, ½ (scant) cup softened butter and 3 tablespoons honey. Crush the graham crackers very fine. Work in the softened butter and the honey, blending well. Pat firmly into a pie plate. Chill thoroughly before adding the filling.

And just in case unexpected guests should drop in it is nice to have this luscious steamed pudding in reserve.

Honey All-Bran Fruit Pudding

One-fourth cup butter, ⅔ cup honey, 1 egg, ½ cup milk, ½ cup Kellogg's All-Bran, 1 cup sifted all purpose flour, ½ teaspoon salt, ½ teaspoon soda, ½ cup figs, put through a food grinder and ½ cup of raisins. Cream softened butter and the honey together. Beat egg very light, then add to the creamed mixture with milk and all-bran. Sift flour, measure, and sift with salt and soda. Add to first mixture with figs and raisins. Mix well. Fill a greased one-quart mold two-thirds full. Cover tightly and steam for 2 hours. Serve with a honey sauce made by blending equal parts of softened butter and honey.

Honey Refrigerator Rolls

Two cakes compressed yeast, ½ cup lukewarm water, ⅓ cup milk, ⅔ cup shortening, ⅔ cup honey, 1 cup warm mashed potatoes, 1 teaspoon salt, 2 well-beaten eggs, and about 6½ cups sifted flour.

Crumble and dissolve the yeast in the lukewarm water. Scald the milk and add the shortening, honey, mashed potatoes, and salt. Mix well. Cool to lukewarm and add yeast and well beaten eggs. Add sufficient sifted flour to make a soft dough that will not stick. Knead for 10 minutes. Wrap in heavy waxed paper and store in refrigerator, using as needed. This dough will keep several days. When ready to bake, pinch off small pieces and shape into rolls. Let rise until double in bulk. Bake in a moderate oven, 375 degrees F., for about 20 minutes, or until nicely brown. Brush tops with butter.

Aurora, Nebr.

On the Cause of EFB

By Lee H. Watkins

In my paper "A Case History in European Foulbrood" I described how EFB came to San Joaquin Valley and the typical rapidity with which it spread. In this paper I want to tell a bit of what we have learned about the etiology of EFB and the methods of treatment we have used. In such a short space, no attempt will be made to go into the subject fully, nor is any claim made that the methods discussed here will prove effective elsewhere. I merely wish to indicate what I believe to be a new angle of approach to the problem of the cause of European foulbrood.

A few years after EFB arrived in the Valley, the advent of the motor truck caused an extensive development in the practice of migratory beekeeping. It was soon noticed by the local beekeepers, when moving their bees to the various kinds of nectar and pollen sources, that in certain definite areas EFB was present in a much larger percentage of the bees than in other areas, and that the amount varied within wide limits from year to year from no apparent cause.

The significance of these facts was unknown to, or overlooked by G. F. White who, in his pamphlet "European Foulbrood" printed in 1920, makes the statement:

> "It is found that the cause of the disease [EFB] is governed very little if at all by the quality of the food gathered by the bees[1]".

Several years before Mr. White made this statement, the beekeepers in the Valley had come to a conclusion just the opposite of his, namely that the quality of the food the bees gathered had a whole lot to do with the disease. The following illustration will show what I mean: Colonies allowed to fill up on jackass clover honey, left to winter on it, and not moved into another region before the spring wildflower flow, invariably develop close to a one hundred per cent infection of EFB. If the bees in the clover region are in reach of other sources of food, the percentage of EFB is never so great. On the other hand, if the bees are moved out of the clover regions in the late fall or early spring to another type of honey country, only a small percentage of the hives will develop EFB. We have also learned that during some springs, EFB tends to be present in other regions besides the jackass clover ones. Bees in certain sections regularly contract the disease in a more virulent form than others.

If the colonies infected with EFB are left in the location where they first show signs of the disease they will, in spite of the recommended methods of treatment, usually become more and more rotten with EFB until they die out completely. Our remedy is simple; we merely move the bees to another honey flow, for even though the bees are making honey and pollen at the old location, the infection increases steadily; but when the bees are located on a different nectar and pollen source, most of the colonies will soon recover from the disease, while the badly infected ones will respond readily to the modified Alexander treatment.

In other words, there appears to be a definite correlation between the location of the infected colonies and European foulbrood; and since a different location simply means a different food supply, it is probable that the honey or pollen source, or both, is a very important factor in the occurrence of European foulbrood.

The food supply of the honeybee and especially of their larvae is composed of honey, pollen, and the gland secretions of the nurse bees (the gland secretions are dependent mostly on the diet of the nurse bees). I do not think that the honey supply is the contributing factor, though it might be, because in comparing the chemical properties of the various San Joaquin Valley honeys used for winter bee feed, there appears to be no significant difference in their respective compositions. I refer the reader here to the tables on pages 10-15 of Eckert & Allinger's recent pamphlet "Physical and Chemical Properties of California Honeys" (Bulletin No. 631, University of California, College of Agriculture, Davis, California; August, 1939).

My belief is that the important contributing factor in the occurence of EFB is either the lack of pollen, or some deficiency in the quality of

[1]G. F. White—"European Foulbrood", U. S. Department of Agriculture, Bulletin No. 810, Washington, D. C. 1920. P. 8.

the pollen supply. Which it is, I do not know. At present Mr. Frank E. Todd and his associates at the Federal Bee Culture Station at Davis, are conducting a series of experiments which are throwing considerable new light on the relation of pollen to the general economy of the hive. For some unknown reason most of us seem to have overlooked the real importance of the pollen supply. Mr. Todd has been interested for a number of years in pollens, and since the average commercial beekeeper has not the time and money to carry on elaborate experiments, we are fortunate to have a man with the ability of Mr. Todd who is in a position to investigate this phase of apiculture.

Bees working on the jackass clover bloom return to the hive with their bodies covered with a very fine bright-yellow pollen. Thus, there does not appear to be a lack of pollen here, which means, if there is any correlation between EFB and the pollen supply, that it is due to the poor quality of the pollen. Considerable work remains to be done relating to the size of, and the chemical composition of the various pollens, before the above facts can be definitely related to EFB; but I do believe there is a correlation here somewhere.

European foulbrood appears to be a "low-resistance" disease, just as tuberculosis is among human beings. By this I mean, that even though the bacillus causing EFB is present, there will be little or no visible evidence of the disease until the food supply becomes deficient, thus lowering the resistance of the larvae and allowing the bacillus to do its destructive work. This, of course, is only a tentative theory that remains to be proved, but it does offer an explanation to many of the peculiar habits of EFB.

As is well known, the occurence of EFB after the first year or two of infection in a given area exists in serious amounts only in certain fairly well-defined districts. Here in the San Joaquin Valley, where migratory beekeeping is practiced extensively, it was soon discovered that a change of location was all the treatment necessary to clear up most cases of the disease; whereas beekeepers who maintain permanent apiaries and whose bees suffer from EFB in varying degrees from year to year, have little opportunity of learning that this irregular occurence of the disease might be due to the eratic quality of the pollen supply. I am wondering if any beekeepers who have several permanent yards have noticed whether their apiaries differed in the percentage of EFB infected colonies?

It used to be considered that the maintenance of strong colonies of bees was one of the best methods for the prevention of EFB. But we now know, that under most conditions, a strong hive cannot resist the disease any better than a nucleus. The few examples wherein a strong colony apparently fares better than a nucleus may be due to the fact that with its larger field force the strong colony can reach more varied sources of pollen which are capable of partly resisting the EFB bacillus, and provide a greater force of nurse bees in the hive to clean out the infected cells.

EFB is unquestionably a spring disease, as we seldom have but a few scattered cases during the balance of the season. These isolated instances can be explained by the theory that the hives acquiring EFB have a low-resistance level, and though our worst drifting occurs during the cotton flow, these few cases do not spread the infection to other hives in the same yard because the seemingly immune colonies possess a high-resistance level to the disease. Our customary procedure with these few cases of infection is to requeen the hive, and without further attention the disease usually disappears.

In the spring the pollen is exceedingly important; for it is then that such a large proportion of brood is being raised. Without pollen there can be no brood-rearing, and when the pollen supply is deficient the resistance of the larvae is lowered and they become more susceptible to EFB. The known cases where slightly infected larvae recover from the infection, may be explained by assuming that the nurse bees are able to feed a pollen of different quality to the larvae that gives them the necessary strength to throw off the infection.

Coming back to my analogy between European foulbrood and tuberculosis, it is known that when either disease appears in a new territory, it is much more virulent during the first few years, but after the susceptible individuals are wiped out there is not nearly so high a frequency of fatal cases. This fact contains

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From the Field of Experience

BEES IN THE CLASSROOM

By Chester A. Robinson
Principal, J. S. Kendall School

Not so many years ago, the boy who brought a mouse to school usually put it in his teacher's desk drawer and expectantly sat down to await the fun when his teacher started to look for her pitch pipe. A snake brought in by the class mischief-maker always created a riot as the harmless and defenseless snake was used to make life miserable for the little girls. Today things are different and every well organized elementary school classroom has its quota of interesting plant and animal life, and the more alive the better. The study of science and nature in the school accounts for this interest and the child's natural curiosity about things of nature is now partly satisfied by observing these specimens at close hand.

Honeybees lend themselves well to this type of work and the lessons children may learn from the study of bees are many and varied. Small groups of children may be conducted to a nearby apiary if proper conditions permit, but to bring bees directly into the classroom not only allows more children to see them, but if the right kind of observation equipment is used, pupils may study them at their leisure and for longer periods. At the same time they see what actually goes on within the hive.

It is possible to obtain observation hives which may be permanently set up in some part of a school building with an outdoor exit connected with a window ledge. (An elaborate one is on display in the Smithsonian Institute in Washington, D. C.). When it is considered impracticable to set up such an extensive hive, a simple solution, which will give almost the same results, may be worked out by using a single, full-depth, glass observation case, which can easily be made in a home work shop or in the school shop.

This case consists of a wooden frame-work similar in length and depth to a regular standard hive body but only wide enough to comfortably house one full-depth frame. In place of wooden sides, pieces of window glass are used and instead of the usual type of hive cover, a hinged board, which is locked securely with a small brass hasp and padlock, covers the case. The entrance is covered by a piece of wire screen securely tacked in place.

Usually some bee man in the community will be glad to loan the use of a frame of bees from one of his hives, although care should be taken to keep the bees in the case not more than a week, and to keep the case out of the hot rays of the sun as the glass sides generate too much heat if so exposed. In choosing a frame from a hive, one should select a frame which contains some sealed brood, pollen and honey; also bees of various ages, some drones, and, if possible, a queen; in fact as representative a frame as possible, showing all sorts of bee life should be chosen.

Such an observation case used by the writer in his elementary school has brought delight to many pupils and has helped to vitalize the teaching of science to young boys and girls whose curiosity is boundless.

Belmont, Mass.

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HAVE YOU HEARD?

By J. T. MacMillan

That honey is used as the latest medium for rooting greenhouse cuttings of chrysanthemum?

That in Scotland members of the Clan McKenzie are officially known as "the bees" for their ability to protect themselves?

That the Latin word for beeswax meant to "embalm for burial"?

That until the year 1700, people generally believed bees came from the carcass of an ox?

That the first ancient people known to settle down and build homes of some permanence, the pile dwellers of the Swiss Lakes, had utensils for separating honey from beeswax?

That Napoleon Bonaparte's Royal Crest was the honeybee?

That Alexander the Great, by his own command, was buried in virgin combs of honey?

That the Pharaoh's of Egypt literally were Byati-King Bees?

That ancient Babylonians, thousands of years ago, knew how to cre-

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ate statues by the lost beeswax method still in use today?

That the famous Appian Way, a paved roadway built 312 B. C. and in existence yet, means the Road of the Family of the Bees?

That about 400 B. C. Aritophanes said beeswax was good for many purposes among which were, metal protection, modelling, writing tablets, and for sealing love letters?

That the first historian, Herodotus the Greek, tells how to make artificial honey?

That in Sanscrit the Hindu religious leader's name, Vishnu, means, "the one born in honey"?

That, also in India, poets and singers must eat honey to sweeten their words?

That in England many people still call linoleum, wax cloth?

That 3000 years B. C. migratory beekeeping up and down the Nile River was standard practice?

That big beekeepers are not a modern development. Duzzian, a King of ancient Czechoslovakia, temporarily defunct, owned almost 4,000 beehives?

That the Incas of Peru offered honey in sacrifice to the sun?

That Central Europe is perhaps the world's finest beekeeping region, yet Polish peasants average a mere five pounds per hive annually?

That a bird of Africa called the honey-guide, genus Indicator, leads men to bee's nests in hope of sharing in the spoils, but it has been known to err, leading one to the leopard's lair instead, so watch out?

Katonah, New York.

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IT CAN BE DONE

By Grant L. Ward

Three years ago I took up the study of honeybees as a hobby. During this time many interesting experiments have been tried on swarms of bees kept in my back yard. The photograph shows the results of one experiment.

Last fall, about August 1st, a new queen was given to the experimental swarm which was queenless. The swarm was packed for winter on November 15th in a ten-frame hive body. There was brood on three and a half frames at that time. Two swarms were packed in a single case, one on top of the other, with tunnel openings facing opposite directions. Planer shavings about four inches thick were used as an insulator. There were 25 pounds of honey in the hive.

The swarm was unpacked on May 5th and another hive body with drawn comb and 20 pounds of honey added on May 18th. On June 8th there were seven frames of brood in the lower hive body and five in the upper. The swarm was inspected on June 15th and the two hive bodies reversed. One shallow frame super with drawn comb was added.

On June 26th three shallow-frame supers with drawn comb were added. Three 28-pound supers for comb honey were placed over the first shallow frame drawn comb super on July 6th. On July 13th one 28-pound super was placed next to the top comb honey super. A 56-pound comb honey super was placed between the comb honey and shallow frame drawn comb super (next to hive body) on July 19th.

At the time this picture was taken, on August 10th, the bees were capping the outside combs in the 56-pound super. On August 24th I trapped off the remaining supers down to the second hive body. I have about 160 pounds of strained honey and 160 pounds of comb honey from this swarm.

Next year I anticipate an experiment on a two-queen colony in a passageway hive to relieve congestion and thus prevent swarming.

Beloit, Wisc.

What a beginner in beekeeping can do by a little experimenting.

A NO-BOTTOM HIVE

By Harry Selders

Why all this discussion of top, bottom, middle, large, small, and combination hive entrances, when the difference is hardly noticeable, if other conditions are the best? The three essentials for good wintering are a good force of young bees, plenty of good honey, and a thorough windbreak. It is rather difficult to decide which of the three to give first place, but one thing is sure,—without the bees the other conditions can not give good wintering. On the other hand, if we have the bees we can provide the others. We must have all three at the same time to insure good wintering. When we have these I can't see any difference in entrances nor even in having the whole bottom open.

I have a colony that is coming through the third winter without a bottom-board under the hive. The hive sets on three stakes 20 inches above ground. The bees have built enough comb under the bottom-bars to fill a shallow extracting super, no food chamber needed. They rear brood in these exposed combs and in a good flow unload a lot of honey there, but by next morning it is all moved up. In the three summers not a frame was handled and they never even thought of swarming. They work in supers as readily as any others, nothing to do but put on empty supers and take off full ones.

I would not recommend this method where the temperature goes below zero, yet by placing an empty hive body under the main one, letting the comb hang inside I believe they would stand pretty cold weather, as no moisture collects in a hive so open. If wind could hit them I am sure the results would be disasterous. In this climate where zero weather is seldom seen no packing for winter is done, and summer entrances are often left open all winter and there seems to be no difference, provided mice don't get in the large entrances.

Farmington, Del.

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AN EMBARRASSING MOMENT

By John R. Hancock

On a beautiful afternoon in October my wife phoned me from my home in Dallas that the bees were swarming. I thought it was very late in the fall for them to be leaving their home for new quarters. However, I rushed home, and to my surprise I found them located in an ash tree in a public place at my residence. I hastened to change my clothes so I could work with them in a suit that was more to their liking. I put on a pair of seersucker pants and climbed up the tree to bring them down so they could re-enter their former home.

While I was up in the tree some distance, and in plain view of the busy street, my pants suddenly fell down over my shoe-tops. In the meantime I had broken off the bough of the tree the bees had settled on and there I was holding the bough in one hand and clinging desperately to the tree with the other hand to keep me from falling. I was sorely embarrassed, but could do nothing about my pants. Street cars and automobiles, including pedestrians, stopped to gaze at me on my lofty perch in the tree. Many laughed; others wanted to call the fire department. Traffic was almost suspended. Ladies especially got a good view of me in my BVD's.

With much carefulness I brought the bees down and re-instated my pants, and managed to put the bees in their happy home. Someone asked me what I had to say after I came down out of the tree and I said: "God save the queen".

Dallas, Texas.

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PUTTING THE BEES TO BED

By Clarence Tontz

The more we read about the art of putting the bees to bed for the winter, it seems the less we know.

In portions of the northern states bees have been wintered successfully with no packing whatsoever. In Wisconsin, bee inspectors report finding hives on farms so full of holes that when disturbed they "leaked out mad bees like a hornet's nest". These hives have never been packed, yet they go along pretty well. On the other hand, we occasionally hear of heavy winter losses of bees heavily packed.

The problem of wintering bees is yet in an experimental stage. It will be fine if a sound non-packing method is evolved. But with the information at hand, the average beekeeper will be more likely to stay in the business if he uses a moderate amount of packing.

In Wisconsin, Arthur Schultz has been keeping bees for a good many

(1) During the fall feeding on sunny days the bees couldn't wait until the sugar syrup in the truck was unloaded.

(2) Some colonies took three and four pails to fill up the empty spaces in their brood-nest before packing.

(3) The packing case is set down on the hive stands.

(4) A bridge, shown in Joe's hand, covers the porch of the hive. This fits snugly against the slotted hole in the packing case. The bees then have an entrance free of shavings.

(5) Emil Bender unloads shavings from a nearby factory. Planer shavings are much better than sawdust.

(6) Planer shavings are poured on top of the hives in the packing case.

(7) Pails of syrup are given those colonies short of stores in the spring long before they are unpacked. The shavings are packed around the pails so that the syrup will stay warm longer.

(8) Joe Mills finds that many of the colonies have fine brood-nests in February.

years. The packing cases he uses are the same ones he started out with. As long as the bees had plenty of stores and a good queen they never failed to winter well in these cases.

The cases are made of half-inch scrap lumber. Each case holds two colonies. A one-inch cleat is nailed in each corner. Inside the cases are lined with a tough insulating paper. The loose telescoping cover of the case is covered with heavy tar roofing material. The entrances are slots 1" x 6". The entrance reducer is nailed to the case.

The bottom of the case is detachable. When packing the bees the case bottoms are placed on the hive stands, the hives having previously been removed, and about 3 inches of shavings spread on.

The two hives (outer covers removed) are set close together. The case body is now placed on the case bottom, the bridges adjusted and 4 inches of shavings packed around and over the hives.

In previous years Schultz has wintered his bees in a single chamber. Lately he has gradually turned to wintering them in two chambers. Extensions were thus put on the cases. A frame of half-inch material about 8 inches wide was fastened to the top of the cases.

The cases are economical to build. They last many years. When not in use they are simply stacked around the sides of the apiary.

No one knows better than the experienced beeman that the bees should be prepared for next summer's honey flow this fall. Good winter protection is an essential part of that preparation.

Stillwater, Okla.

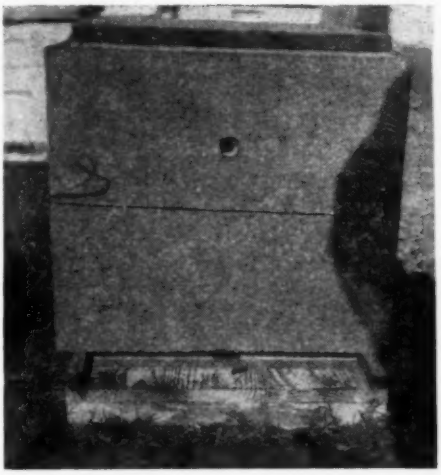


Fig. 1—First operation.

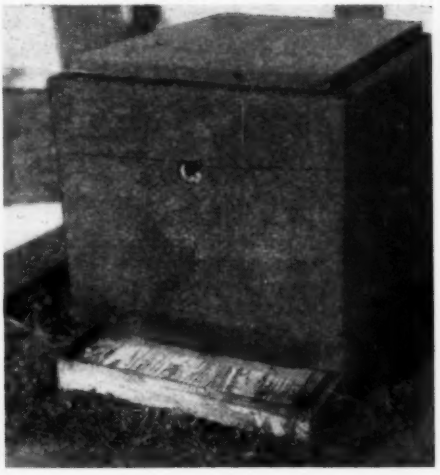


Fig. 2—Second operation.

CELOTEX AND TAR PAPER FOR PACKING

By Walter Schleiden

Celotex has been used as insulation on my story and a half hives. The celotex is 25/32 inch thick and is cut 16 inches wide by 20 inches long for sides and 16 inches by 17¾ inches for the front and rear of the hive. These I put around the hives and tie in place with binder twine. On top I put a piece the size of an inner cover. This sets on top of the inner cover but is put on after the tar paper is around the sides, as shown. Then the metal cover is put on and the hive is ready for the winter. It takes very little time. In the spring I store the insulation in the bee house till the following fall.

I wintered 24 hives in the winter of 1938-'39 and lost one colony. This colony was lost because it did not have a queen in the fall.

I also have a top entrance of ⅝ inch hole about 1½ inches from the bottom of the shallow super, which I use as a food chamber.

Random Lake, Wisc.

Fig. 3—Hive ready for winter.

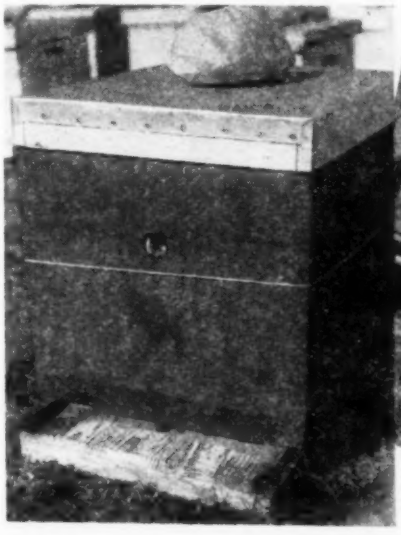
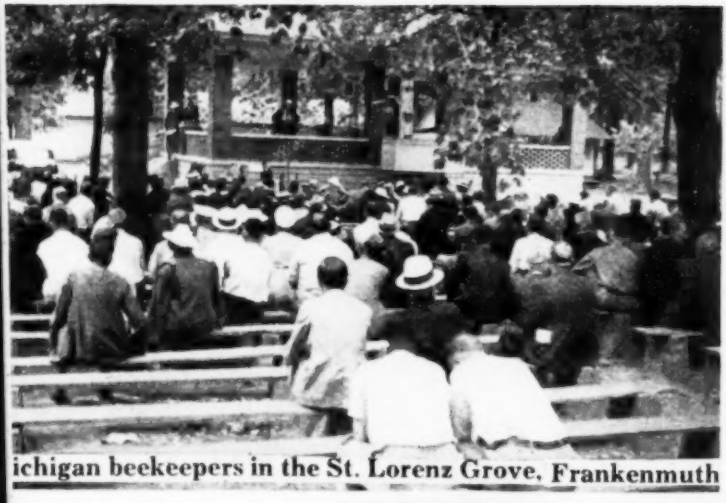
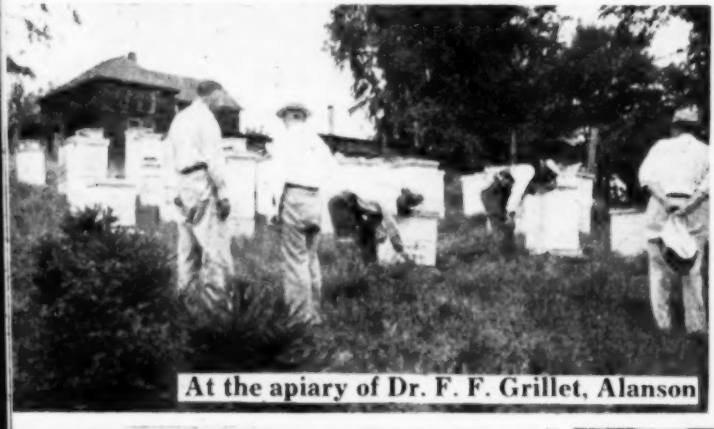


Fig. 4—Hives and bee house.



ichigan beekeepers in the St. Lorenz Grove, Frankenmuth

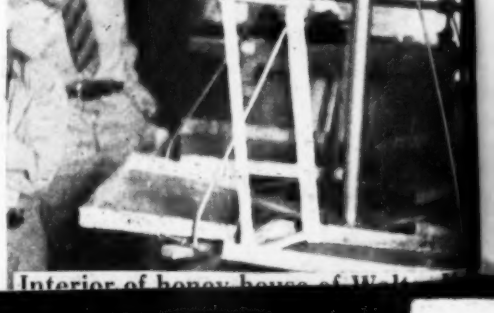
Michigan Ho zer



At the apiary of Dr. F. F. Grillet, Alanson

A close-up wd

s. Bowman's apiary in Cheboygan Co.



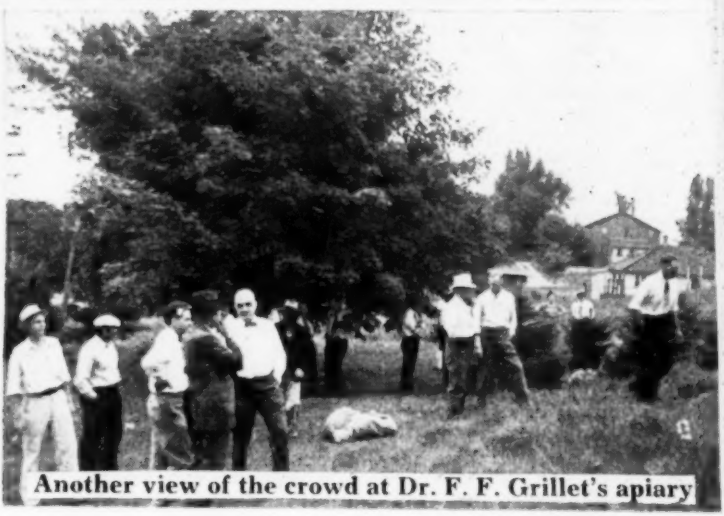
Interior of honey house of W

Hon zer Band

L. S. Griggs

Automobiles assembling at the Indian River State Park

se-up wd at the Grillet apiary



Another view of the crowd at Dr. F. F. Grillet's apiary

Michigan Summer Field Meeting, August 1-3

By E. R. Root

Except for California and Ohio Michigan, year in and year out, produces more honey than any state in the Union, according to ... wold J. Clay's reports. This may be accounted for by its soil conditions surrounded almost by lakes, the presence of which draw moisture so important in honey production. Perhaps more important still, it has a leadership in the person of Prof. R. H. Kelty, of

(Continued on page 723)

SECOND GLANCES

By C. M. Isaacson

If these comments are a trifle scrambled, blame it partly to a boiler of cappings in the process of rendering. Hot wax in the vicinity does not add to one's peace of mind—it can cause too disastrous a fire.

Mr. Munro's summary of wintering as opposed to package bees is valuable because based on actual experiment. His results seem to show, that given proper preparation, wintered-over colonies are more profitable than starting anew each spring with package bees; that cellar wintering (in a good cellar, of course) is cheaper than outdoor wintering; and finally, that the earlier brood in the outdoor colonies does not result in stronger **honey flow** colonies or bigger crops.

Mr. Watkin's account of experiences with EFB (page 613) should serve to make present day beekeepers thankful that the wide use of Italian bees has put such a curb on its ravages. It very evidently was a terrible scourge with more susceptible strains. Reasons for the amazing rapidity with which it spread are apparently still unsolved in full.

The article on laying workers (page 615) shows that a feeling of necessity must be present before they appear—if a queen is in the colony, even if not laying, the workers evidently do not have the hopelessly queenless feeling enough to stimulate egg laying. The first sentence of his final paragraph could well be taken note of—a preconceived pattern does not explain all bee behavior.

Mr. Morris' honey strainer is very good, as is also his plan for heating the honey in the extractor; warm honey is not the least part of any successful clarification process. It is worthy of trial by any beekeeper, it looks simple and good (page 616).

Bee Hunting De Luxe is the title of Mr. Snyder's contribution (page 621) but the text doesn't bear out the title. "More stinging from fewer bees" seems to be the motto of the Puerto Rican Apis clan.

That is an interesting letter submitted by Prof. Wilson (page 622). As the editor states, the manipulations described are in some cases in use today, but "J. A." was evidently **too** far ahead of his time, with his movable-frame hive and methods of increase. It remained for Langstroth to perfect and start it into wide use.

It is well to have Mr. Milum's caution as to the use of Methyl Bromide as a wax moth fumigant (page 625). It appears that its fumes can be decidedly dangerous if care is not used, and this word of warning may serve to avert unpleasant consequences for some beekeeper.

E. S. Miller's advice against depending on supersedure as a means of requeening is sound. Systematic requeening is far safer, and in the end, more profitable. Supersedure queens are usually good and can be left when found, but all colonies should be checked over—too many will not supersede at the right time.

Those who process any great amount of honey will find Editor Root's description of Walter Dienelt's home plant of real value. The clever method of emptying the cans is itself a hint worth knowing. Note that care is taken not to **overheat** the honey.

With all the discussion of methods, honey crops, sales, etc., it is well to have an occasional reminder of the other side of beekeeping (page 636). Many of us have seen bees literally "standing still" while hovering over a blossom, and the editor is right, it is an unusual and beautiful sight.

Editor Root's collection of opinions on wintering is very good—he presents all sides of the question fairly. It seems that practically all the writers are agreed on the need for upward ventilation; many, on top entrances; and some, on winter brood-rearing. As regards cellar-wintered colonies being behind in brood and bees—are they behind **at honey flow time?** That is the important point, and would seem to need further discussion; the best way for the true facts to be brought out. All the articles, and especially the summary at the end, are well worth studying carefully, whether or not we agree with all the views expressed.

In Talks To Beekeepers (page 652) interesting items are constantly given. Such a one is that taken from the Australian Beekeeper as to the age factor in division of hive labor. Read over those five points, they may refresh your memory.

Don't forget the American Honey Institute and its constant work in our behalf this fall. If your honey crop has been good, give in proportion; if poor give **some anyway,** to help sell that big crop you may have next year.

Southern Federation Conference

By H. S. Foster
Secretary, Southern States Beekeepers' Federation

November 18, 19, and 20 will witness a steady stream of beekeepers and wives pouring into the busy metropolis of Tampa, Florida, Host City for the Southern Federation Conference. They will learn that Tampa receives its name from the Indian word, Itimpi, meaning "close to it". Tampa appropriately earns its name; it is close to the Old World through its Latin Quarter in Ybor City; close to Cuba by steamship or air; close to many churches, and close to all luxurious recreational facilities. Here you'll find the Hillsboro Hotel in the heart of Tampa an ideal location for headquarters of the Conference. The Hillsboro Hotel has made many attractive improvements during the past five years and its excellence is one of Tampa's traditions.

The Florida beekeepers and their wives have joined efforts in an attempt to make the conference one of the most outstanding of all meetings and they could not have selected a more favorable season or more delightful town for the conference.

The visitors will find Tampa abounding in facilities for boating, swimming, fishing and recreation. Tampa's convenience as a point of departure for all of the West Coast, with railroads, highways and airports radiating in every direction, is the magnet which draws an increasing number of tourists every season. It was an important commercial city, however, before there were any tourists in Florida, and it still retains many of the characteristics impressed by the Cuban-Spanish immigrants who were among its early settlers. An entire district of Tampa, called Ybor City, is still Spanish in language, customs, and point of view. Its inhabitants are, for the most part, workers in the cigar factories which constitute Tampa's principal industry, although there are many Spanish families of wealth who maintain the highest traditions of Spanish culture.

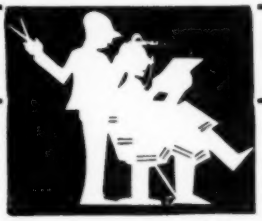
Hillsboro Hotel.

Tampa wears a tropical and exotic aspect in the sharpest contrast to cities farther north. Palms in enormous variety dominate the scene in Tampa. Vegetation is almost tropically luxuriant; the bird life is definitely subtropical. Salt water fishing trips out in Old Tampa Bay with competent guides is one of the entertaining features for visitors and tourists. Auto and bus trips to nearby towns as St. Petersburg over Gandy Bridge, Clearwater, via Davis Causeway, are easily arranged.

November 18, 19, and 20 spent in Tampa are going down in beekeeping history as one of the most outstanding and interesting dates. See page 709 for program.

In one of the many beautiful parks of Tampa.

Just News



One of Michigan's outstanding beekeepers, C. B. Hamilton, of Fenton, passed on recently at the age of 76 years. In 1921, Mr. Hamilton developed a colony from a 2-pound package with queen received from J. M. Cutts and Son, Montgomery, Ala., on April 18, that produced 577 finished sections of comb honey the same season.

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The Middlesex County Beekeepers' Association will meet on Saturday, November 30, at 7 P. M. at 19 Everett St., Concord, Mass. A turkey will be given away. Mr. Copeland will show the color pictures he has been taking at the eastern beekeepers' meetings this summer, and Mrs. Copeland will be in charge of the Ladies' Auxiliary Supper. Membership in the club is not limited to residents of this county.—Arthur M. Southwick, Pres.

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The annual convention of the California State Beekeepers' Association will be held on November 7, and 8 at the Hotel Roosevelt, in Hollywood. A change is being made in the usual formal program that will permit more informal discussions on the floor of the convention as well as before and after the regular sessions. Papers will be limited to 30 minutes, or less, and the regular sessions will be scheduled for between 10:00 and 12:00 and 2:00 and 4:00 on each day of the convention. This year finds the market lower than in many years and an effort will be made to strengthen the demand and to promote a more orderly system of marketing. We cordially invite all who can attend from neighboring states. Special entertainment features are being arranged for the ladies and general attendance by the local chairman, Mr. Wm. J. Fox of Hollywood and by Mr. Dan Addison of the Convention Bureau.—J. E. Eckert, Associate Apiculturist.

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The Beekeepers' Item has now "rounded out twenty-five years of service to beekeepers". The journal was originally started by Louis Scholl in 1916. In 1924, he turned the editorial management over to E. G. LeStourgeon, its present editor. "Guy", as his friends call him, has injected his pleasing personality into the pages of his journal. While it carries few or no pictures its contents are breezy and conversational. Gleanings wishes its contemporary another period of twenty-five years and then some.

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The Illustrated Weekly Life Magazine for October 14 carries an article on the "Bee Hunt—How to find Hive and Honey". It is, of course, well illustrated covering four large pages showing the whole procedure from start to finish. While it makes the pardonable mistake of referring to the workers as "he" the article is informative showing how the wild bees are domiciled in a modern hive and winding up with a picture of a pretty girl eating a chunk of honey. This article with its "twenty million" readers should stimulate an interest in bees, and particularly in honey.

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The annual meeting of the Colorado Beekeepers' Association will be held at Grand Junction, Colorado, on November 12 and 13.—L. D. Rice, Sec.

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The annual convention of the Minnesota Beekeepers' Association will be held in conjunction with the convention of the Minnesota Horticultural Society on November 13-14 at the St. Paul Hotel in St. Paul. Prizes will be awarded for the best exhibits of comb and extracted honey. Bring or send your exhibits to Mr. Edward Thomas in care of the St. Paul Hotel. —Norris J. Ellingson, Secretary.

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The North Carolina State Beekeepers' Association is planning to sponsor a fall meeting for the beekeepers, to be held in Henderson, N. C., Thursday, November 14, 1940. Out-of-state speakers will include Mr. H. W. Weatherford, Vernon Hill, Extension Specialist for Va.; Mr. T. C. Asher, large commercial honey producer of Brookneal, Va.; Mr. A. D. Hiett of the G. B. Lewis Co.; and Mr. H. J. Cary of The A. I. Root Co. Our own state talent will include Mr.

(Continued on page 718)

Editorials

"It is better to debate a question without settling it than to settle it without debate"---Joseph Jaubert.

Good pollen combs may not at once be apparent. In the fall bees very often store honey on top of the pollen. This seals and preserves it for winter and spring use. Digging down into such combs will show the pollen underneath. Combs like this are just right to put next to the cluster for winter brood-rearing.

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Loud speakers are beginning to be quite common at field day meets. It is well known that the average voice will not carry far in the open air, especially if it be that of a woman. Devices for amplifying sound are a great help at conventions, indoors or out because they enable those in the rear seats to hear as well as those in the front rows. Dr. Dunham, of Ohio, and Clifford Muth have brought their outfits to field meets in Ohio and in other states. They deserve the thanks of all who wish to hear all that is said.

• • •

Fall Preparation of Bees as an important factor in good wintering is stressed in most of the news items sent out by the bee extension department of most of the states. If we had been preaching that doctrine for several years back it would have been vastly better for the industry. See "The Prophecy That Came True" on page 703, this issue.

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The New and Old Orthodoxy The reader will note the slogan that we have adopted at the head of this department. With this thought in mind we presented in our October issue the new Orthodoxy of Wintering from pages 638 to 651. In this issue, pages 672 to 678, we present the more conservative view as expressed by Dr. Phillips.

Although our good friend differs from our conclusions we make no rejoinder in reply as we believe our readers are capable of drawing their own conclusions without our help.

While we differ in opinions, Dr. Phillips in a recent letter generously offers this: "It does not worry me that you and I do not always agree for I hope both of us are big enough to take it." With this spirit in mind Father Time will help us sift out the truth. "It is better to debate a question without settling it than to settle it without debate."

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The Bees of Moviedom Some nice things about bees and honey have been said by Edgar Bergen, through Charlie McCarthy, and now we learn that Rudy Vallee's chef uses honey in his cooking.

Beverly Hills, the home of many movie stars, is a bee paradise for mountain sage honey. Bees have a fashion of getting between the walls of the palatial residences. They swarm out and in the end their owners keep bees. This is how Edgar Bergen got started. His doll, Charlie, every now and then tells about the wonders in a bee hive.

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Our Three Bee Libraries We recently visited the Dr. Miller Memorial Library at the University of Wisconsin, Madison. It is not only a monument to the name of the Sage of Marengo, but a fine tribute to Prof. F. H. Wilson who has spent so much time in gathering it. Its presence at Madison was one of the main reasons why the white clover U. S. Bee Culture Laboratory was located there. As time goes on the wisdom of the selection will become more and more apparent.

The other, the Langstroth-Root Memorial Library, at Cornell University, Ithaca, New York, in charge of Dr. E. F. Phillips, is no less noteworthy and a tribute to Dr. Phillips.

Some of the most valuable literature on bees would become extinct and out of reach of scientific research were it not for these libraries.

Of ancient literature on bees, Dr. Bodog F. Beck, of N. Y., owns a collection that is as complete as it is unique. It is both interesting and inspiring to see with what amounts almost to affection that Beck handles these old volumes.

XUM

"We Will Not Be Undersold" The above remark was uttered and repeated by a prominent carload distributor of honey at several bee conventions last winter. The fallacy of such a policy is that the other fellow will be sure to adopt the same policy resulting in the low prices now current on good honey. When one begins to cut prices on honey because some one else does, he starts a general stampede of price cutting and the result is that the producer pays the bill. The margin of profit for the dealer is such that he goes out of business. Who suffers? The producers, of course.

The same policy on the part of roadside stands is just as silly, as it is destructive to a fair market.

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Starving in the Midst of Plenty A severe cold spell of winter may last so long that a cluster of bees cannot reach honey within an inch or two and it may starve even though the hive is heavily packed. If moderately packed or not packed at all, the first day of mid-winter sunshine may send its heat rays to the cluster so it can move to its stores.

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Granulated Sugar the Cause of Dental Decay The dentists have generally stated that the final cause of dental decay is granulated sugar, either cane or beet, and that, as this sugar is the main ingredient of most of the candies, the candy eating habit is the fruitful cause of tooth decay. A News Release of May 14th, states that at the University of California research workers report that they have "stopped tooth decay in 90% of the individuals comprising an experimental group, by eliminating refined sugar from the diet, and thus controlling the growth of acid forming bacteria in the saliva".

This confirms the work done at the University of Michigan Dental School. Sugar is an acid forming food, while honey, on the other hand, as shown by the work of Dr. R. E. Lothrop, is alkaline forming.

Young fellows who like to give their best girls a box of candy, should be informed of the virtues of the Nellie Stratton Sweets, candy made mainly of honey.

The Nellie Stratton candies have been on the market for a number of years, but they have now reached the highest point of perfection; both from the standpoint of health-giving qualities and from the standpoint of a confection that does not cause dental decay, so common in our present day school children.

• • •

Bug Eat Bug When a destructive insect like the Japanese beetle, the white fringed beetle, or the gypsy moth, destroys tree or plant life, an effort has always been made to find a parasite or a natural enemy that will in turn destroy the destroyer. That means find a bug that will eat the bug that threatens the farmer or civilization.

In New Jersey, where the Japanese beetle is such a pest, tests are being made to inoculate the grubs with germs of a deadly disease. If successful the dead grubs would not kill birds or make it necessary to spray or dust with a poisonous mixture that is causing trouble in the states bordering the Gulf. It is perhaps too much to hope that a germ or parasite can be found to kill off the white fringed beetle. It would solve the whole problem. See page 565 of our September issue.

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Bee Inspectors the Source of Correct Information The bee inspectors of the country as well as the bee extension men, because they travel all over their respective states, are able to give more reliable information regarding beekeeping conditions than are local beekeepers who can report only for their own localities. In proof of this see Inspector Reese's news letter in the early fall of 1939, page 703, predicting a winter loss of 50%. This prophecy literally came true for Ohio and adjoining states.

U. S. Census on Bees Incomplete

H. J. Clay's reports of bees and honey production will be more accurate than the data from the U. S. Census because Clay's data comes from bee inspectors who know the actual number of beekeepers and their crops. Not in a single case have we learned where the Census enumerators have asked a beekeeper, farmer, or merchant whether he had any bees. The U. S. Census figures relating to bee culture, we fear, will not only be woefully misleading but a joke. The Census figures are not out yet, but how can they be accurate when bee culture has not even been mentioned to a single beekeeper so far as we can learn?

Cash Farm Income Increases According to "The Agricultural Outlook" for September, 1940, farm buying power beats 1929 and cash farm income for the U. S. A. in 1940 will be about $8,900,000,000, or, 4.2% more than in 1939.

This should re-act favorably on beekeeping, a branch of agriculture, because it should mean that people have a little more money to spend, not only for things in general, but also for honey.

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Bees Leave Identification Marks on Pilferers Three youths tried to steal honey from a hive recently but were driven off by the bees after doing some damage to the hives. The sheriff's task of identifying the looters was made easy because of swollen eyes and faces.

Fortunately for beekeepers the majority of those who are given to pilfering have a profound respect for bees. Comparatively few are willing to forego the pain from stings to satisfy a sweet tooth.

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When the Pendulum Swings Too Far Whenever a change is taking place in our social thinking, whether it be in the line of religion, politics, business, economics or our ways of earning a livelihood, there is always danger that our appraisal of some things will go too far. To put it into common language the pendulum will swing too far. To express it in concrete form in our acceptance of the new orthodoxy of wintering we may discard hive insulation or packing altogether, forgetting that local conditions may require not only good food and windbreaks but packing.

Whatever has given good results in wintering in the past, stick to it. Try out the new on a small scale. The wintering problem is by no means solved yet for all conditions of atmosphere, temperature and climate.

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A Prophecy That Came True In the late summer and fall of 1939, Chas. Reese, state bee inspector, after having gone pretty well over the state of Ohio, sent out a news letter as of Sept. 1, 1939, which reads as follows:

Columbus, O.: Ohio beekeepers face prospects of heavy losses in their colonies this coming winter as a result of serious drouth and intense heat during late August and early September, according to State Apiarist C. A. Reese.

Heat and drouth have combined, Reese says, to seriously reduce the pollen supply from plants on which bees depend for food and which plays a highly important factor in brood rearing. Inspections of many Ohio bee colonies disclose queen bees stopped laying eggs late in August, nearly eight weeks earlier than under normal conditions. Late summer weather conditions have also been unfavorable to production of honey.

As a result many colonies of bees in Ohio will enter the winter with a shortage of both food and young bees. Unless improved weather conditions produce a heavy crop of asters and other pollen producing fall flowers Reese expressed fear that beekeepers may suffer heavy loss among their colonies during the winter. One alternative, he says, is for beekeepers to start feeding their bees with sugar syrup as a means of augmenting part of their winter food supply.

The prevailing condition is the exact opposite of 1938 when bees entered the winter with abundant supplies of pollen, honey and young brood, and came into the spring with a winter loss of only about one per cent which Reese had predicted.

Healthy condition of bees last spring resulted in the earliest swarming on record and their early work among blossoms was a great factor in this year's record breaking Ohio fruit crop. Without an active bee population pollination of fruit, vegetables and farm crops is retarded and small harvests result.

A possible 50 per cent winter-kill among Ohio's bee population would be a serious blow to 1940 crop prospects in Ohio.

This letter was truly prophetic as compared to what actually did happen for there was between a 50 and 60% winter loss.

Note this, that the 1200 colonies belonging to The A. I. Root Co. were well supplied with honey and pollen early in the fall in single-walled two-story hives well filled with young bees. The Company's loss was slightly above 20% as contrasted with the average loss for the state of colonies of from 50 to 60%. For the last 12 years our yearly winter loss in single-walled hives with upper entrances for average winters has not been above 5% and this was in colonies with poor queens or where queens died early in the winter.

This year our hives are boiling over with bees with 50 to 60 pounds of goldenrod and some aster honey. If the last is sealed over we do not fear the future. Would our loss have been less had we used packing? Probably, but would the saving have been offset by the cost of packing? We can not figure the cost of two men and a truck at less than $2.00 per hour and it usually takes an afternoon to pack a yard of bees.

The lesson in Reese's prophesy is —see that your colonies are well supplied with sealed stores and pollen early in the fall.

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From North, East, West and South

NORTHERN CALIFORNIA, Oct. 4.

Weather: It is quite a puzzle to know how to describe weather in Northern California at this date. The visitor for the first time in this district would be liable to think we had perpetual sunshine, while the old timers might say we are ready for the first rain, after which other rains will follow for we have every reason to believe we will have plenty of rain the coming winter. Guessing on the weather is very much like guessing on politics.

Today (Oct. 4) we have clear weather here in the Bay Region, a little farther north, showers; in the foothills real rain and in the mountains the first snow of the season.

Crop: These conditions make beekeepers think about getting ready to close up their work and prepare their bees for winter. Extraction is pretty well over. Many of the commercial yards have been requeened. The honey is a better grade than for the past two years and, while beekeepers say they are not satisfied with the crop or price offered for their honey, they really have had a fairly good crop. A hopeful sign for better times is that many more beekeepers used new cans and cases and this led to an extra effort to have honey more carefully prepared before canning.

Miscellaneous: There are two developments in the honey industry in this section of California well worth mentioning. The first is an organization of commercial beekeepers, "The California Honey Producers", whose purpose it is to secure for its members the best possible market price for their honey. To this end the honey was pooled, a sales manager appointed and the beekeepers pledged themselves to the most careful preparation of their honey before packing it in new cans and cases. This plan of marketing has met with sufficient success to guarantee its continuance.

The second is the establishment of a plant in Oakland to manufacture a honey-coated cereal. This plant is already in operation and their product is on the market. Quite a substantial capital was required for this industry and it has been promoted and financed entirely by commercial beekeepers.

The California State Beekeepers' Association maintained their exhibit of bees and honey for the second year at the Golden Gate International Exposition on Treasure Island. No exhibit in the great Agricultural Hall attracted more attention. It was estimated that the exhibit was seen by over a million people—admired and praised by thousands. Two and three attendants were kept busy answering questions and giving information about honey during the entire two years of the fair.

The California State Beekeepers' Association will hold its annual convention in Hollywood, November 6, 7 and 8, with headquarters at the Hotel Roosevelt.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, Oct. 4.

Off agin; on agin, going agin, Flannigan.

Weather: Yes, we have been having weather of the same old kind in southern California. Warm to hot during the day and cool to cold at night, but as for moisture, except for a little fog near the Coast, it has been nil. Reports from the mountain districts where we usually have thunder showers during the summer months say that with the exception of one year this is the driest season in 60 years.

Honey Crop: It is in the cans and not very satisfactory to most producers. Even the great irrigated valleys of our southland did not give a yield of honey that came up to the hopes of the beekeepers.

Market: The honey market has not materially changed since our last letter of two months ago. A slightly weaker tone if we can believe some of the buyers. But we will say there seems to be a more hopeful feeling among some producers. With all of the government spending, together with the disturbance abroad, honey,

along with other food commodities, should be in greater demand and at prices a little nearer commensurate with the cost of production.

Beeswax: Quotations on wax are about the same and are several cents lower than at this time last year.

Miscellaneous: Mountain fires are again taking a heavy toll off the brush covered hillsides of Southern California. It may only be a hundred acres here and a thousand acres there but in the aggregate it is a heavy toll on the honey producing ranges as well as the water conservation territory of the southland. The forest service of the National Government has done much in the way of fire protection and preventative measures and do all within their power to control a fire once it gets started.

As we glanced over E. R. Root's "Symposium on Wintering", it brought to mind the statement of an old farmer beekeeper up in Utah some years ago when asked, "How is it you are so successful in wintering your bees"? He said, "Give me a box full of bees and honey and keep them dry and they will winter all right". The same applies here in California although some think we have no wintering problems. Young bees, quality of stores and amount of pollen are all important but a box full of bees, plenty of stores, and a dry place usually fill the bill for successful wintering.

When we saw the excellent picture of our old friend, N. E. Miller, in September Gleanings and read the statement, "Extending through six states and comprising about 20,000 colonies", it brought to mind a statement made many years ago by J. F. McIntyre who was a successful beekeeper in the early days of California beekeeping. After he had enlarged his bee business to include a number of out-apiaries making it necessary to employ considerable outside help he said, "I sometimes feel that when we had the one home apiary and did all the work within our own family we were just about as prosperous and much happier".

Of course, 20,000 is only adding on a few more cyphers but think of what goes with it. All too many of our so-called large operators become broken old men long before their time. It all makes a pretty picture but think of the price they pay.—L. L. Andrews, Corona, Calif.

ARIZONA, September 30.

Weather: For the past month we have had almost continuous cloudy weather but rainfall has been spotted. Some areas have had heavy rains while other parts of the state have had very little rainfall. First summer rains began around June 20, which was a little earlier than usual even for the high mountain areas. Rains were fair through July, but rain fell only once here in August. Locally we have had enough rainfall in September to bring out the sage in fine shape to produce enough for bees to winter on. Also there is an abundance of wild flowers. Locally the bees have stored more pollen this fall than in the past several years.

Prospects: With continued light showers bees should continue to gather honey and pollen until frost, though there is no prospect of any surplus. It is not uncommon in some areas for bees to gather pollen and honey until frost in November. There is very little trouble here with winter losses where bees go into winter with plenty of honey and pollen as is the case here now.

Crop: The main honey crop was again light over the desert region due to shortage of rainfall. I have two reports of good crops being received, but this was where the water underflow was shallow and a good crop is usually received over this area. The locations are what we call "unusual", for generally in the desert locations the yields vary considerably from year to year.

I have one report of a fine crop in the farming area where water was pumped for the irrigation of alfalfa. Others report their crop short in areas where there was a shortage of water for alfalfa. So it is impossible yet to know just what the crop was for the state as a whole, though I do know the yields were not large for many of the desert locations for the past three seasons.

Miscellaneous: About the average number of producers have already marketed their honey. In many cases after the product is sold and expenses paid there is nothing left for the producer for his pay for the year's labor. Due to low prices and yield some of the young enthusiastic be-

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ginners have sold out and gone to the plane factories on the coast to work.

There is an interesting prophecy going around now, if true—that the southwest is due for a several-year-period to have rainfall above the average for the past several years. This state has the lowest average rainfall of the 48 states. So it is easy to understand that an increase in rainfall means much to this state.—Leslie Wedgworth, Oracle, Arizona.

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INDIANA, October 1.

Honey Crops: Clover honey in this locality this year will average considerably less than 50 lbs. per colony. Upland areas produced practically no surplus in yards where the colonies were allowed to swarm, and the fall crop also is next to nothing except in the lowlands. Farther south in Indiana a fair crop is reported. One beekeeper reports a flow from buckwheat.

Buckwheat seldom yields any considerable amount of surplus in this part of Indiana. Whenever it does produce, it merely serves to darken otherwise good goldenrod and heartsease, making the honey difficult to sell. Our inspector says that when his bees gather buckwheat honey he is reminded of the time when as a boy he caught a skunk in a trap—he doesn't know whether to be happy or sad.

Miscellaneous: A tour through the county in company with the state inspector reveals the fact that there are only about 60 per cent as many colonies as there were a year ago. Several of the older beekeepers have passed away and the youngsters, it seems, are not particularly interested in producing 5-cent honey. Winter and spring losses also have served to deplete many apiaries. Despite the short crop and low prices, honey is not moving as in former years. Many bees are being offered for sale with few buyers.

A light frost occurred September 26 which probably finished the goldenrod in low places. Bees are now working on aster, and with cool nights and warm days they should secure sufficient stores for wintering. —E. S. Miller, Valparaiso, Indiana.

ILLINOIS, October 2.

Weather: During this season's honey flow the weather has been as ideal as we have experienced for several years. A late season was caused by the very damp and cold early spring weather. Hence, the flow was much later than usual. Colonies were in very poor condition due to the very heavy winter loss. However, the lateness of the season helped to get the bees in better condition. Since the loss for the entire state last winter was well over 35% many of the colonies that did survive were very weak. After the clover flow started it turned extremely dry and remained that way throughout the summer. Some rains fell in August, the northern half of the state receiving the greater amount.

Crop: Near the writer's apiary there was less clover than in many parts of the state. White clover seemed to be less abundant than in 1938 although alsike and sweet clover seemed to be as plentiful. There was a fair flow in most parts, yet a few spots failed to give a pound of surplus. One of these spots was just west and south of Chicago. Less than a hundred miles from there, however, it was very uncommon to see apiaries with an average of less than 200 pounds. The honey from this clover flow was the finest in quality, very light in color and heavy in body. Comb honey was of excellent quality.

The fall flow was more spotted than the white flow. Heartsease yielded better locally than at any time since 1931. Many colonies have stored over 80 pounds from this source in the writer's apiary. At this writing the asters are in full blossom, and the weather is just right for plenty of aster honey. My bees are out of range of the asters. Last season a good heavy super of aster honey would have been welcome.

Miscellaneous: Bees will go into winter in better shape than for several years. With good strong colonies of young bees, young prolific queens, good stores and ample protection, bees should winter almost perfectly.

With a fair crop of honey and the country getting head over heels in production of war materials the out-

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look is very optimistic. If it were not for the fact that the world is crazed for human destruction and the lust for individual grandeur we could smile at better honey prices; however, as it is, we watch and wait—Carl E. Killion, Paris, Illinois.

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OREGON, October 4.

Weather: So far this fall the weather conditions have been very satisfactory. There is just enough rain to provide sufficient moisture for plants and enough mild weather for a reasonable amount of flight on the part of the bees.

Honey Crop: The honey crop, likewise, is about average with some reporting unusually high average while others report less.

Oregon State Beekeepers' Association: Our annual association meeting this year will be held in Portland, November 22 and 23. Meetings will probably be held in the Public Service Building. At this year's annual meeting, we are giving special attention to honey as a food and to the problems associated with its marketing. Mr. W. D. Haskell of Portland is our state president. He, with others in the Portland area, are making every effort to make the annual meeting of special interest this year. Honey exhibits at various places will be featured.

Miscellaneous: The writer would like to take this opportunity to express in public our appreciation of the courtesies extended to us while we visited The A. I. Root Company in Medina, Ohio, in August. It was a pleasure which we have looked forward to for many years. Any beekeeper who finds it possible to make a trip East should by all means visit not only The A. I. Root Company but others of the larger plants throughout the East. In view of the fact that there is quite a growing tendency for western people to go East to drive their new cars West, this may be an opportunity for them to make such a visit. It might be well, also, to call the attention of beekeepers to the fact that should they be driving East or West along the Lincoln Highway through Wyoming, they should certainly stop off and visit the U. S. Bee Culture Laboratory at Laramie.—H. A. Scullen, Corvallis, Oregon.

IOWA, October 7.

Crop: The honey season for 1940 has been just fair for Eastern Iowa. At one time it looked like an excellent flow from the clovers, but dry hot weather continued for too long a period for anything like a bumper crop. Some localities harvested a very good crop of fine clover honey, while others did not as some parts of Iowa were much drier than others.

Weather: Local rains prevailed and those parts lucky enough to get them at the proper time were the localities where the bulk of the clover honey was produced.

I think most parts of Eastern Iowa had a reasonably good flow of fall honey as we had an unusual wet August which should have put the fall flow on it's feet, and our dry fall came at a time when the fall flowers had seen their best day in so far as nectar secretion was concerned.

This fall flow should have given in most cases sufficient winter stores for the bees.

Prices: Honey has been selling very reasonably this fall. Beekeepers are retailing a very nice clover honey at two good sections for 25c and a very good grade of extracted clover in 60-lb. cans at $4.20 per can, delivered at the door. At those prices people should not go hungry for honey, as I do not think you can buy sorghum molasses any cheaper, at least in this locality.—W. S. Pangburn, Center Junction, Ia.

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VANCOUVER ISLAND, October 5.

Weather: The winter was one of unusual mildness, even for such a wonderful climate as Vancouver Island, and there was scarcely any snow—but an ample sufficiency of rain. The spring was also very early, bees getting active in February, and brood-rearing in full swing about a month ahead. This meant much need of watchfulness, as a wet spell of a week or so speedily brought the colonies down to starvation point. It was the year of heaviest expanse for sugar, but was amply worthwhile, for as soon as the fine weather came, there was a strong army of bees ready to sally forth and make the most of every drop of nectar.

The weather during the honey flow was ideal, but as I have not made up my records, I have no idea of what the average would be, but probably not less than 75 lbs. per hive.

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Market: Owing to the short crop of 1939, many stores were demanding local honey in the spring, and there was none to be had. However, 1940 has been the best season for at least four years, both as regards quantity and quality.

The chief source for the honey flow here is fireweed of which there is literally miles. Many beekeepers from outside sources come in for that time, and judging by some hives which I saw, were doing very well by the way the hives were tiered.

There is no farming here, and so no fields of clover, or other sources for nectar, which does not make it an ideal beekeeper's country. In the southern and northern parts of the Island there are orchards and farms, which make a crop more possible every year.

Miscellaneous: So far, the local market is good. People are growing more "honey-minded", and prices are also very fair. On a recent visit to Victoria I noticed that practically only local honey was on the market, very little Eastern or Alberta to be seen. One buyer to whom I was speaking in August said that they had not been visited by any honey salesmen from the East at that time, and he was inclined to think the major portion of Eastern might be shipped to Britain.

There is now a much larger number of beekeepers who keep over 100 colonies and the Island honey is of excellent quality and usually commands a ready sale.—Mrs. M. Maynard, Lake Cowichan, B. C.

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ONTARIO, October 4.

Again, as in July, I have to pinch hit for the one who has not failed to fill this space for a good many years, but we expect he will be able to take over again for the next copy of Gleanings. After being out of the hospital for some weeks he found it necessary to have a second operation which he went through on Sept. 20. He is getting along well and we hope to see him home tomorrow afternoon, Oct. 5th.

Weather: After having the same kind of cool, wet weather as was common in most sections we are having a spell of lovely fall weather now, today not a cloud in sight.

Colony Condition: We expect a heavy feeding this fall as many of our best hives are almost at the point of starving. It seems that when the cold spell shut off our buckwheat flow many broodnests were of solid brood and did not have a chance to store, which left them in bad shape. We have started feeding a little earlier than in some years. As we find it makes quite a difference with one short as dad looked after most of the marking up for stores.

Honey Crop: Our crop, as in most cases this year, fell far below normal but with the higher price received I guess we should not complain. We had a very fine crop of comb honey which seems a little hard to believe, that is, for a bad year but conditions were very good in that section of the county where we have our comb honey yards.

Market: Demand for honey is very keen and we are glad to say that our entire crop is sold and shipped. This is just a little out of the ordinary as we have it with us well into the winter most years. We found buckwheat was a very light crop in most parts of Ontario and it was readily picked up by Jewish dealers who wanted it for their New Year's celebration. For a few days it looked as if we would have a bumper crop of buckwheat but a very early frost came and even where it did not freeze the flow was over.

We have been very much interested in the wintering articles. I would like to relate one thing that really sent home the idea of an upper entrance to us. Last fall we bought a yard of 10-frame Quinby hives with a full 10-frame Quinby on top. Naturally we expected a perfect wintering, but to our dismay found a number of them dead. The bees had dropped down filling the lower entrance and had we supplied an upper entrance no doubt they would have come through perfectly.

Mr. Jones of Bedford, Quebec, paid us a visit this week and he tells us of one chap who is trying the upper entrance out on 500 hives this year. Packing was another item of much interest. I have been talking less packing for some years and now after seeing the opinion of so many others have decided to cut down considerably. Last winter a couple of hives did not get top packing by mistake and this spring they came out perfectly and with plenty of stores.—Walter G. Byer, Markham, Ontario.

PROGRAM

Southern States Beekeepers Federation
and
Georgia & Florida State Associations

HEADQUARTERS:
HILLSBORO HOTEL, Tampa, Florida

MONDAY, NOVEMBER 18

E. C. Bessonet, President, Presiding.

8:00—Registration, Hotel lobby.
9:00—Meeting called to order. Invocation: Rev. John Branscomb. Welcome to Florida, Governor-elect Spessard L. Holland. Response, E. G. LeStourgeon, San Antonio, Texas. Welcome to Tampa, Mayor R. E. L. Chancy. Response, L. M. Dewey, Merritts, Florida. Announcements.
10:00—Address, President E. C. Bessonet.
10:15—"Nectar Producing Plants of South Fla.", Frank Stirling.
10:30—Address, M. S. Yeomans, State Entomologist, Georgia.
10:45—Address, W. E. Anderson, State Entomologist, Louisiana.
11:00—Address, Clay Lyle, State Entomologist, Mississippi.
11:15—Entertainment—group singing.
11:30—Address, Dr. D. W. Watkins, Clemson College, South Carolina.
11:45—Committee appointments.
12:00 to 1—Luncheon, Hillsboro Hotel.

MONDAY AFTERNOON

1:30—Address, Nathan Mayo, Commissioner of Agriculture.
1:45—Address, E. G. LeStourgeon, San Antonio, Texas.
2:00—"Honey Plants of South Carolina", David Dunavan.
2:15—Beekeeper's Duty to Himself, Geo. Bohne, Luling, La.
2:30—Research in Beekeeping, Dr. Warren Whitcomb, Jr., Bee Culture Laboratory, Baton Rouge, La.
3:00—Address, E. R. Root, Medina, Ohio.
3:30—Address, Alonzo McKay, Vicksburg, Miss.
3:45—Entertainment.
4:00—Address, Dr. M. C. Tanquary, Minneapolis, Minn.
4:30—Address, C. H. Bishop, Atlanta, Ga.
5:00—Open discussion.

MONDAY EVENING

8:00—Moving Picture, "Beekeeping in Alabama", Thos. Atchison, Montgomery, Ala.
9:00—Special Sessions of: Apiary Inspectors of America; Florida State Beekeepers' Association; Package Bee Shippers; Honey Producers and Packers.

TUESDAY, NOVEMBER 19

A. J. Reamy, Pres., Georgia Beekeepers' Association, Presiding.

9:00—Meeting called to order.
9:15—Address, G. G. Puett, Hahira, Ga.
9:30—"Value of Bees in Pollination", Geo. Rea, Cornell University.
9:45—Address, A. V. Dowling, Valdosta, Ga.
10:00—Address, Tom Burleson, Texas.
10:15—Address, R. W. Sterrett, Owens-Illinois Glass Co.
10:30—"It's Up to You and Me", M. J. Deyell, Medina, Ohio.
10:45—Address, George Abrams, Maryland.
11:00—Entertainment: Duet by Mr. and Mrs. Gus Seeburg, Bradenton, Fla.
11:15—Address, L. W. Rhodes, Jacksonville, Fla.
11:30—"Florida Honey and How to Pack It", O. E. Seeburg, Manatee, Fla.
11:45—"Georgia Honey and How to Pack It", J. J. Wilder, Waycross, Ga.
12:00 to 1—Luncheon, Hillsboro Hotel.

TUESDAY AFTERNOON
LADIES' AUXILIARY

Mrs. R. E. Foster, Presiding.

1:30—Meeting called to order.
1:45—Address, Mrs. Harriett M. Grace, Madison, Wisc.
2:15—Address, Dr. Ouida D. Abbott, Gainesville, Fla.
2:45—Address, Mrs. DeWolf, Crescent City, Fla.
3:00—Address, Mrs. Tom Burleson, Texas.
3:15—Address, Mrs. H. S. Foster, Gainesville, Fla.
3:30—Address, Mrs. R. W. House, Dunedin, Fla.
3:45—Entertainment: Mr. and Mrs. Gus Seeburg.
4:00—Address, Miss Isabelle S. Thursby, Tallahassee.
4:30—Open discussion.

TUESDAY EVENING

7:30—Banquet—Hillsboro Hotel (informal), L. M. Rhodes, Jacksonville, Toastmaster.

WEDNESDAY, NOVEMBER 20.

L. M. Dewey, Pres., Florida Beekeepers' Association, Presiding.

9:00—Meeting called to order.
9:15—Address, Raymond Shelton, Tampa, Fla.
9:30—Address, A. J. Reamy.
9:45—Address, L. M. Lewis, Havana, Fla.
10:00—Address, Dr. E. Ortel, Bee Culture Laboratory, Baton Rouge, La.
10:15—Address, P. G. Craddock, Raleigh, N. C.
10:30—Address, C. A. Reese, Columbus, Ohio.
10:45—Address, Peter Bianco, Tampa, Fla.
11:00—"Shipping Package Bees", M. C. Berry, Montgomery, Ala.
11:30—"Receiving Package Bees", A. M. Kelty, Michigan.
12:00 to 1—Luncheon.

WEDNESDAY AFTERNOON
E. C. Bessonet, Presiding.

1:30—James A. Starkey, Indianapolis, Ind.
2:00—Address, J. M. Robinson, Auburn, Ala.
2:15—Open Discussions.
2:30—Committee reports; Election of Officers; Unfinished Business; Adjournment.
(See also page 699 for further particulars)

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Heads of Grain from Different Fields

Virgin Queens With Swarms

On page 574, Sept. 1940, issue of Gleanings, J. F. Norgren asks how many virgins go out with a swarm. There may be instances where more than one virgin goes with a swarm, but the virgins that are so often found on the ground under where a swarm is clustered, did not come from the hive from which the swarm issued. Virgins that are out on their mating flight often join swarms that are in the air or clustered. I have found a dozen or more little small balls of bees under a swarm that had clustered, each one with a virgin. Quite a large percent of our virgins are lost at mating time and we attribute this to their finding swarms away from the queen-yard that we do not know about.—Mell Pritchard, Medina, Ohio.

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Do Swarms Fly West Always?

I have never seen a swarm of bees go east when they come out. They always go west, northwest or southwest. I have asked other beekeepers about this and some say they hadn't thought of it, but all the swarms they have had did go west or in a westward direction.—Geo. S. Bayne, Montgomery, Ala.

[Have any of our readers seen swarms fly eastward?—Editor.]

The Bee Does its Part for the Red Cross

When a food auction was conducted in Hollywood for Red Cross benefit on July 27, one of the most popular and profitable booths was the honey booth, where honey donated by California bee enthusiasts was put at auction. Ann Rutherford, screen actress, was properly and capably head of the honey booth.—Louise Hannah Kohr, Burbank, California.

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From Box Hive to Skyscraper in One Season

About a year ago a man left a box hive of bees on a stump and said to me, "You may have that if you will take it away". The bees got through until April with what there was in the box hive. They were almost starved. That very day I fed the few that were left, and were they hungry! Well, I fixed up the box as you see it, and this spring I transferred them to the good hive standing by. Now, August 1, 1940, they are full up and pretty savage. I have six hives and four are wild bees from trees—all as high as this one.—Roy A. McDuffie, Big Rapids, Michigan.

Mr. McDuffie started with bees in a box hive a year ago, but soon graduated to a modern hive.

The Saltpeter Method of Treating AFB. A Correction

I notice in your August issue, page 507, a reference to the saltpeter method of transferring bees from an infected hive in a case of AFB. You say: "The bees are vigorously smoked . . ." This would give the impression that the smoker bellows should be worked energetically; whereas, **it must not be worked at all,** or flames and sparks will belch forth, and injure bees, also probably set the hive and perhaps surrounding vegetation on fire. The saltpeter takes care of the vigorous smoking, without any assistance from the bellows! Just light rag from the top and put on nozzle. The best account of the process is in BEE CRAFT, numbers for March, April and May, 1939. —A. D. Betts, Horsham, Sussex, England.

[The mode of treatment was taken from Tickner Edwardes' book "Beekeeping for All". We accept the correction.—Ed.]

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Modified Alexander Feeder

Despite claims to the contrary, I find the Alexander feeder rather sloppy to use, as the syrup will persist in running across the slats and away. Also, my bees, not having read the rules, delight in flying out the minute the tin cover is removed, and sting me on the nose. To overcome these two annoyances the protruding end of the feeder should be hollowed out and a baffle plate fitted in across the end of the slats, leaving something less than a bee space along the bottom. This greatly facilitates feeding, as, even at dusk, it is easy to see when the feeder is full, and also, not a bee can fly out. As I use hive stands, I found it was necessary to devise something simple to hold the Alexander feeder in place. Nothing seems quite as handy as two-inch strips of ordinary shingle, inserted thin end first between the hive-stand and the floor board, leaving four or

MODIFIED ALEXANDER FEEDER

five inches of the thick end protruding at each side of the rear of the hive. These strips hold the feeder snugly in place and are easy to put on or remove. I have also used these feeders for stimulating purposes by cutting a round hole in the cover and putting an ordinary jar in place. First, of course, a different size baffle plate must be used to permit the bees to get underneath to the feed.—Walter Fleming, Brantford, Ontario.

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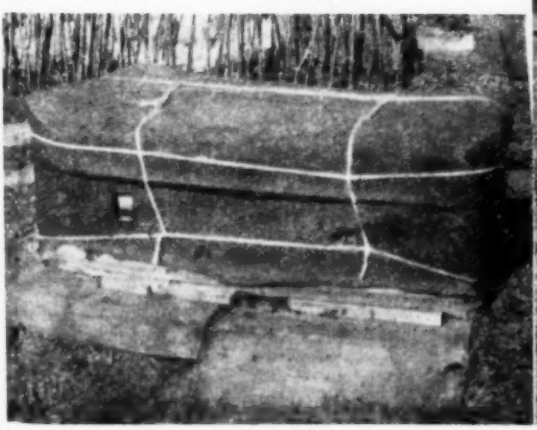
Hives—Old and Modern

I wintered my bees in a paper blanket, as shown in the picture. I have a Ukrainian neighbor who built his hives of a different design than used ordinarily. His hives are double with an entrance for each part and a door on the side to remove the frames. Each part is painted a different color. The double hive is built approximately 2 inches thick. He also has about 20 modern hives.—L. H. Kerr, West Fort William, Ontario.

Below: A winter blanket for Mr. Kerr's bees. Right: Two colonies under one roof.



XUM

Spinster

A Beautiful World

This old world is glorious, now, in its colorful autumn dress, and so very beautiful is it, no words can fitly describe it. Bees are flying when it does not rain,—which is seldom,—and there is a sad lack of nectar. Clover blossoms have been blighted by heavy frosts, and the fields stretch brown and sere.

Food Plentiful but Difficult to Obtain

This has been the poorest honey year that we ever remember,—cold and rainy, with sunshine and fair weather rare indeed. Bees could not be blamed for being irritable, some of them downright ugly. Women, although naturally of sweet disposition, would be the same were there an abundance of fruit all about, fairly begging to be garnered, every sealer in the house empty, and it raining too hard to get any of it. And then, worse than ever, to see food stored for winter use, growing less and less to appease the hunger of the hungry children who clamor for it.

Killing Bees vs. Feeding

This is the first year in our history that there was any talk, serious talk, of killing bees, rather than feeding and wintering them, and I must confess arguments pro and con become very heated at times.

Now, I may be actuated by sentiment (and what woman is really feminine without it?), but doesn't it seem wrong to make away with those busy little workers that have worked so hard? Failure to fill their storehouses was no fault of theirs. That is my position.

That of the men-folk is supposed to be more practical and businesslike. It is this: Bees that cannot bring in enough honey to supply us, and also themselves for winter are like cows that yield but little milk. They do not pay, so why buy sugar to feed them? Package-bees may be bought next spring, for the price of that sugar, and besides, there is the danger of losing them. Confucius may say, "Could be", but I do not agree. Bees are not to blame for the weather.

Jane Says;

Thank God for Our Blessings

We hear with dismay, of war and rumors of a greater war, and, thank God this Thanksgiving that our western hemisphere is free from its horrors. What crimes against their fellows men driven by sheer hatred can commit.

We hear, too, the rumblings of the big guns in your political war, over there, and we look hopefully to the outcome. Canada is so close to the U. S. A. that we cannot help being affected by that same outcome.

How foolish, in a political war, are the arguments put up, sometimes! How far-fetched they may be! Veneer and polish do sometimes make rotten planks look really sound and dependable.

Outside, in the bee-yard, all is quiet and peaceful. Have the drones been evicted yet, and if they have, isn't that cause for a greater peace? Men, not working and always demanding food, food on time, too, are more or less of a nuisance, a strain on our nerves and good humor. This year many women up here will follow the bees' example and turn their men-folk out in the cold world to fend for themselves, and incidentally for them as well by earning wages.

The reason? Crops, up here, have failed us because of the continuous wet weather, Potatoes are rotting, grain, in stooks, stands in the fields drenched by one rain after another, and the whistle of the threshing-machine draws ever nearer. Men, so discouraged, are none too pleasant to live with, nor are the womenfolk.

Yes, times are bad, but we should not grumble. Just compare our lot with that of any European nation under dictator rule, then rejoice and give thanks. This should be a happy Thanksgiving indeed.—Spinster Jane.

COMMENTS FROM READERS

"Honey plants and soil in better condition now than in 7 years."—Oklahoma.

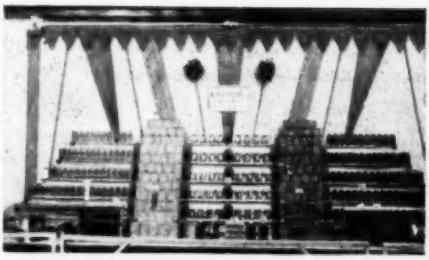
"Rain is needed. Bees are working on aster whenever the weather is warm enough. They have had 3 good days in the last 7 and have gained considerable weight."—Ohio.

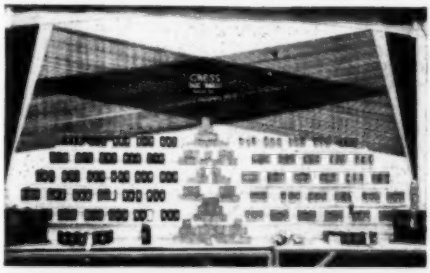
"Our fall flow did not materialize. Weather was too cool and dry but we got enough so they built up in fine shape—thanks to young queens."—New York.

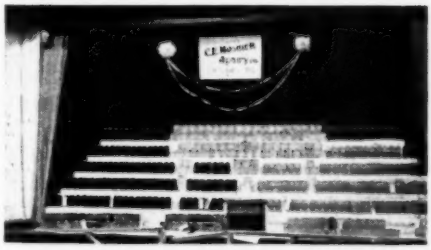
Honey Exhibits at Indiana State Fair

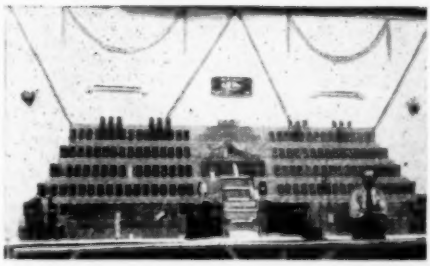
By M. J. Deyell

We had the opportunity this year to visit the Indiana State Fair and to see the splendid honey exhibits in the Agricultural Building. Such attractive exhibits surely do help to make the public more honey-minded. Thousands of visitors passed these displays each day. Each display had an observation hive of bees and some person to explain the mysteries of the hive and how honey is produced. Our industry needs many more such displays. State fairs present a splendid opportunity for beekeepers to get their product before the public eye. Mr. Ben H. Wilkins, New Augusta, Indiana, in charge of honey exhibits is to be commended for his good work.









INDIANA HONEY DISPLAY

1.—Homer Godwin's booth. Mr. Godwin comes from Emison, Knox Co., Ind. He is without a doubt one of our best honey merchandisers.

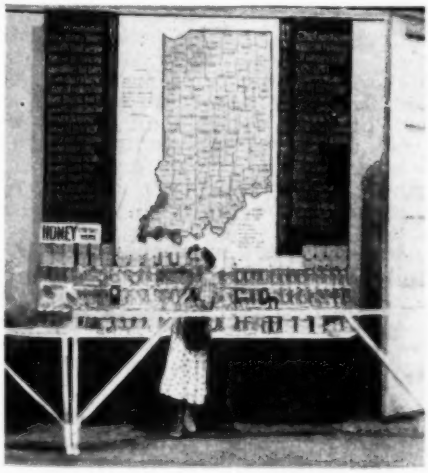
2.—Exhibit of Sidney Cress, Marion, Grant Co., Ind.

3.—Exhibit of C. E. Mosier, Kentland, Newton Ca., Ind. This is Mr. Mosier's second exhibit at shows.

4.—Guy Folk's exhibit, from Bluffton, Wells Co., Ind. Mr. Folk is one of our oldest showmen.

5.—This is an amateur's exhibit of work in beeswax.

6.—The picture at bottom left shows a map with various honey regions of Indiana, the names of different honeys and samples in glass. This map and display are interesting, original, and educational.



Asked and Answered

What to Do with a Weak Queenless Colony

Question.—My friend and I own two colonies of bees. One is fairly strong with sixty or eighty pounds of honey. The other is now rather weak and has been queenless for about three weeks (maybe more). Is there anything that can save that colony this late in the season? Or would it be more economical to start anew with package bees in the spring?—Paul G. Andrus, Ohio.

Answer.—Regarding the weak colony that has been queenless for a few weeks, we doubt if it would pay to introduce a young queen, especially if the colony is somewhat weak in bees. In our opinion, it would be preferable to plan on giving a package of bees with queen to this hive next spring. Be sure to protect the combs containing honey and pollen so that they may be in good condition next spring. The few bees remaining in the hive can be shaken in front of the other colony late in the fall.

Questions from an Australian Beekeeper to Mell Pritchard and Mell's Reply

Question.—I have not heard anything of your skunks for quite a long time. Perhaps you no longer specialize in skunks. You are, I suppose, the champion queen breeder on earth, and that is why I am writing to you. A practice has grown up here of allowing the nucleus which accepts the cell cups to finish the cells and not to have these cells finished over an excluder. It is claimed that better queens are got by this process. I do not think the cells are as big and rough by this method as those formed over the excluders. I was always under the impression that the bigger and rougher the cell, the better the queen. Another matter I want to consult you about is the size of the cell cup. I was always taught that the cell cups should be about 3/8 inch long or at the most 1/2 inch, but I find that some of the queen breeders here are using cups nearly full depth. They are fully 3/4 inch deep. Can you say whether there is any advantage in this?. On page 496 Gleanings. August 1939, issue. E. S. Miller has something to say on the above matter, but I do not like this method. I can get excellent cells with much less expense and trouble. E. S. Miller thinks that a strong colony cannot produce enough nurse bees to attend to the cells properly, unless all of the brood in the hive is sealed. How do the bees produce cells in their natural state when they are swarming? Do they not produce enough nurse bees to attend to the cells and also attend to the larvae? Did any one ever hear of any complaints of these queens from these "swarm" cells, being short lived, or "failing" in any way? Is it not generally acknowledged that these queens reared by the bees under the swarming impulse, are better and stronger than those we raise artificially?—A. Shallard, N. S. W.

Answer.—Yes I have graduated from the skunk business having found out all I care to know about them, but I yet have a lot to learn about growing queen bees. There are some breeders, in this country, who allow the mating nuclei to complete the cells after they have been accepted. They are accepted by the nuclei with much less loss than ripe cells, and it saves considerable work. But I can not see where it is possible for the few bees in a nuclei to supply the required amount of warmth to properly develop the virgins. This talk about queeens reared from grafted cells not being as good as those from natural cells, is not well founded. The act of transferring the larva has no more effect on the development of the virgin, if properly done, than the changing of an egg from the nest of one setting hen to another, and I can not find that the size or shape of wax-cell used makes any difference. The bees build cells the way they want them. One queen-breeder told me that he put drops of melted wax on the cell-bars and made a dent in them to put the larva in and the bees built cells as big as those grafted into cell-cups. It is the care given to the cells that determines the development of the virgins. When all natural conditions are most favorable, a normal colony will produce as vigorous a queen as can be grown. But periods of favorable conditions are periodic and often of short duration. Modern methods make it possible to create favorable conditions throughout an entire season. In every apiary there is always one queen that is superior to any other as a breeder. By grafting we can get any number of queens from this one. If we depended on having this one queen laying eggs in our queen-cells the number would be quite limited.—Mell Pritchard.

Bees Will Not Store Surplus

Question.—Tell me what is the reason my two colonies of bees have not made a pound of honey this summer.—John G. Bacon, New York.

Answer.—Occasionally a colony is found that will not store surplus. This may be due to the nature or character of the bees. Some colonies are something like some people—they do not like to work. A colony

that is given a chance to store surplus and is populous enough in bees to store a crop but refuses to do so when conditions are favorable for bees to store surplus honey should have its queen removed and replaced by a young laying queen from a strain of bees known to be superior in honey-gathering qualities. Sometimes a colony will become honey bound in the brood chamber. This usually results from a slow honey flow. The bees will store honey in the upper portion of the combs in the brood chamber and crowd the queen down to a very small space for egg laying. This results in congestion within the brood chamber. During a heavy honey flow, bees are forced to store the honey in the supers, that is, if colonies are very populous in bees and if supers are supplied in ample time to avoid congestion. We would say offhand that the two colonies in question may not have been populous enough in bees at the proper time to store a normal crop, or, possibly conditions were not just right for the bees to do good work.

Uniting Two Colonies

Question.—I have a weak colony that I would like to unite with a strong one. Just what is the procedure?—Durward Barrow, Texas.

Answer.—Uniting two colonies of bees can be accomplished by removing the bottom-board from a hive containing one colony and the cover from the hive containing the other colony, then setting the colony with bottom-board removed on top of the colony with cover removed. If this is done late in the evening and done carefully, there is not likely to be much fighting, especially if there is a honey flow on at the time the two colonies are united. One queen will be retained and the other disposed of.

Getting Combs of Honey Sealed and Ripened

Question.—I find myself with quite a few supers of honey not completely capped and the honey flow over. Some have three full-depth supers while 2½ would have heid the crop. Can I wait a week or ten days and extract whether capped or not? Or would it be O. K. to put one partly filled super under the brood chamber and get them to cap off successfully this way, and if I do the latter would it be necessary to put queen excluders between the brood chamber and the partly filled super now placed on the bottom-board?—R. O. Adkins, Virginia.

Answer.—You are confronted with a problem that faces hundreds of beekeepers this year in regions where there is a late summer or fall honey flow consisting of dark honey, following the summer flow. We have the same problem in our apiaries. As a rule, there is a short let-up, or a practical dearth of nectar in between the summer and the fall flows. This year, due to unusual weather conditions, there has been practically a steady flow of light honey following the main summer honey flow. In this region we find it necessary to remove white honey before buckwheat honey comes in. Your idea of placing some capped combs below the brood chamber, with the queen excluder between the brood chamber and the supers, might work. We hadn't thought of this. It is possible, however, that the bees might have a tendency to carry the unsealed honey out of the supers below, into the brood chamber above, especially if honey was not coming freely from the field.

What to Do for Bee Stings

Question.—What will relieve the swelling from a bee sting? It seems that I have tried everything on the market and as yet I have not found anything that will answer the purpose.—Peter J. Matikiewicz, Pennsylvania.

Answer.—The best and only remedy for a painful bee sting is to apply hot water. First scrape the stinger out and then let it alone unless it is very painful—then use hot water. Do not use any medicine or any drug. They only irritate. You will find this whole matter fully covered in our A B C and X Y Z of Bee Culture under the head of Stings. If you are keeping bees and wish to continue, wear a good bee veil and bee gloves. In time you will become immune to the swelling if you can stand the first few stings. Don't open a hive except in mid-day when bees are flying freely and use plenty of smoke.

Swarms Start Queen Cells

Question.—Why do hived swarms immediately start to build queen cells? I hived two swarms on foundation and after 5 days found that the bees were building cells, about five or six apiece. The queens had covered two sides of the frame with eggs. Is this a sign of supersedure? When a prime swarm emerges with a virgin will the swarm cluster as usual before going for the woods?—Howard J. Rock, Wisconsin.

Answer.—Your swarms of bees that started to build queen cells after being hived, were starting to supersede their queen. Ordinarily, a swarm with a good queen does not build cells after being put into a hive. A swarm with a virgin queen may cluster for a time on a bush before moving onto a tree in the woods.

XUM

Talks to Beekeepers

M. J. Deyell, Editor.

Too Busy to Hunt Woodchucks

Some of you readers may recall a few years ago my reference to woodchucks that were found in a bank near a railroad close to my apiary a few miles from Medina. Most of us have a hobby. At that time my hobby was to take my rifle along in the car when I went to the bee yard. When I got tired of working bees, or if they stung too much, I would take my rifle along the railroad track to get a shot at a woodchuck. As I approached the bank in the meadow where they came out to feed and to sun themselves, I would creep along behind the railroad embankment so that I might get as near as possible to them without their seeing me.

Of course, I didn't tell my wife about the woodchucks. She supposed I was working hard in the bee yard. It is too bad to fool our long suffering wives, but I dare say that quite a number of you who read these lines have been likewise guilty.

My wife found out about the woodchucks when she read that Talks to Beginners in the April, 1938, Gleanings. It seems that she rather suspected that something of the sort was happening, because, the bees had to have attention so frequently that spring, especially when she wanted me to beat rugs or help with the washing. Just today, a reader of Gleanings wanted to know how many woodchucks had fallen to my deadly aim this season. I have been too busy for woodchuck hunting this season, or perhaps I only imagine that I have been too busy.

It may sound foolish to say that I do not find the enjoyment in hunting that I did some years ago. Perhaps an innocent woodchuck has just as much right to live as I have.

Do Beekeepers Have Hobbies?

Every one should have a hobby that is something entirely different from one's regular line of work. Is it possible that beekeeping is so intensely interesting that those who follow beekeeping exclusively for a livelihood do not need a hobby to take them away from their regular line of work? I have observed that beekeepers will talk bees and honey from morning till night. I am sorry for beekeepers' wives who have to listen to this bee talk continuously.

I'll have to confess that at present I do not have a real hobby. Even though I am absorbed with beekeeping problems during my working hours, I do find enjoyment in working my own bees, and every time I visit the yard I learn something that is new to me. However, as already stated, I believe every commercial beekeeper should have a hobby, such as stamp collecting, photography or something of the sort that will serve as a diversion from one's regular work. Sideline or backlot beekeepers who follow some business or profession for their bread and butter may consider beekeeping a hobby, and what an interesting hobby it is!

November and December a Period of Quiescence for Bees

Ordinarily these "Talks" do not appear during the above mentioned months, because bees in this hemisphere are comparatively quiet. In the North most colonies are broodless, and, provided they have ample protection from the elements and an adequate amount of stores of good quality, there is nothing the owners can do to improve colony conditions. However, I do wish to make a few observations in closing up these Talks for 1940.

I do hope you who have started with bees this season have made good. The crop generally was quite good this past season. Possibly in some regions conditions were not favorable for securing surplus honey. Under very adverse conditions it is impossible to get a honey crop. But

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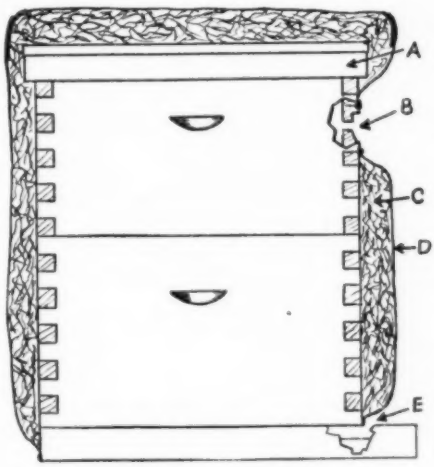
even though your bees gave no surplus but simply made enough for winter stores you should not be discouraged. Next season may be more favorable for bees in your vicinity. Beekeepers, are, as a rule, optimists, —there is a good season ahead.

Don't Expand Too Rapidly

Occasionally a beginner may be unusually successful the first year in securing a bumper crop. The usual tendency is, following a good season, to expand rapidly. Never go faster than experence and knowledge justify. It is much better to get maximum results from the number of colonies one can handle efficiently than to secure a mediocre crop from a larger number of colonies.



This illustrates a method of wrapping a hive in building paper with dry leaves or coarse planer shavings placed between the paper and the hive. (A) shows hive cover, (B) 5/8" hole in front of upper brood chamber, (C) dry leaves or shavings, (D) building paper, and (E) small bottom entrance, about 1½" or ¾" to exclude mice. The cutaways opposite B and E are made in the drawing to show the upper and bottom entrances. The paper in front of the top entrance is tacked close up to and around the auger hole. The method appears to be better than attempting to run a tube through the 5/8" hole and out through the packing.

A Word About Late Honey Flows

It would seem that the seasons and flora are changing. Some years ago when we practiced feeding sugar syrup late in the fall we planned to start this feeding about Oct. 1, after brood-rearing ceased for the season. It usually took about three weeks to complete feeding. Such syrup feeding would have been impossible this fall because a heavy aster flow began in this locality the last week in September and continued until October 13. Our scale hive gained 17 pounds during this period. At present, brood chambers are crammed full of late-gathered honey. Such honey is not considered suitable for winter stores, especially in the North where bees have few, if any, cleansing winter flights. If cold weather follows a late aster flow the bees may not have an opportunity to cure this honey—to drive off the excess moisture from the nectar— and consequently this condition may cause dysentery. If, however, a spell of warm weather follows a late aster flow before cold weather sets in, the bees will ripen the honey and it is then not so likely to cause trouble during a severe winter. Very populous colonies with ample stores and adequate protection against cold weather will fare better with late-gathered honey than weak or understrength colonies with inadequate winter protection.

Don't Tinker with Colonies Too Much

Some years ago I examined some hives of bees owned by a farmer. These hives were close to one of our apiaries. This farmer was a keeper of bees, not a beekeeper, but somehow he managed to winter his colonies successfully. All he cared for in the way of surplus honey was a few sections for table use. He never packed his bees. He didn't reduce the hive entrances for winter and I noticed one or two of his hives had some openings in the corners of the covers. And yet his bees lived through severe winters. I think the secret of his success was due to the fact that he didn't tinker with the brood chambers too much and he left the bees all the honey they had in the brood chambers. He didn't switch the position of combs in the fall and he didn't molest the hives late in the season.

Stick to Present Methods—If They Work

And, finally, on this matter of methods of honey production, wintering, etc., being discussed now-a-days, my suggestion is that you stick to your present method provided you are getting good results. For example, on the matter of wintering, if you are having success with your present method of wintering bees,

(Continued on page 721)

XUM

JUST NEWS

(Continued from page 700)

C. L. Sams, Extension Agent; Mr. P. G. Craddock, State Apiary Inspector; and Professor F. B. Meacham, Teacher of Bee Culture, N. C. State College.

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A new book by Edwin Way Teale, entitled "The Golden Throng—A Book About Bees" is before us. It is different from other books published on the subject. With its beautiful pictures by the author, some of them from micro-photographs of bees and bee life, it excels anything ever published on bees. So far as we have been able to examine the pages, it is correct in science and practice. From a literary standpoint it compares favorably with the books of Dallas Lore Sharp and Maeterlinck. It contains over 200 pages and the fact that its publisher is Dodd Mead & Co. of New York is sufficient guarantee that it reaches the top notch of fine art printing. The price is $3.00. It will make a wonderful Christmas present. No matter how large your bee library may be you will want a copy of this.

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Attention Washington Beekeepers.—The Forty-seventh Annual Convention of the Washington State Beekeepers' Association and the Ladies' Auxiliary will be held November 15 and 16 at Johnson Hall, Washington State University, Seattle, Wash. Some speakers scheduled are: Dr. Kincaid, University of Wash., Prof. J. Dicks, Haney, British Columbia, Dr. H. A. Scullen, Oregon State Agricultural College, Dr. R. L. Webster, Washington State College, R. E. White, Department of Agriculture.—Mrs. Eva Wixom, Sec.

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The annual meeting of the Iowa Beekeepers' Association and the Auxiliary will be held in Ames, on November 21.

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New Hampshire beekeepers will regret to learn of the passing of George Barton, at his home in Meriden, September 29. Mr. Barton has been State Bee Inspector for many years, and in spite of his 80-odd years he carried on until the last, for he was so much like the rest of us "he was happiest when among the bees". He did his work honestly, well, and to the best of his ability, and will be missed among his many friends.—Henry J. Holt, Sec., New Hampshire Beekeepers' Association.

The Beekeeping Division of the Department of Entomology, University of Illinois, will offer its 17th consecutive annual program for beekeepers in connection with the Annual Farm and Home Week of the Illinois College of Agriculture, on January 7, 8 and 9, with speakers from the staffs of the bee journals, officers of the State Beekeepers' Association, the Chief Apiary Inspector, Mr. Carl E. Killion, of Paris, Illinois, and V. G. Milum, Apiculturist of the University, who will be in general charge of the program.

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The Georgia Beekeepers' Association will meet November 7 in Atlanta at Sears, Roebuck Farmers' Market for a program and business.

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PREPARING COLONIES FOR WINTER

(Continued from page 685)

pen in a packed hive just as readily as in an unpacked hive. Ventilation has little or no relation to this phase of the problem.

The provision of ventilation is important for a colony because a cluster of bees produces considerable moisture in a hive during the winter and this moisture must find a vent else it will wet bees and combs. This is very damaging to both. Ventilation can be afforded (1) by leaving the regular full size entrance open on the bottom board; or (2) leaving the bee escape hole in the inner cover open, or partially open by use of a burlap strip applied so late in the fall that the bees do not seal it with propolis; or (3) by boring a small ⅜ inch hole in the front of the hive at some desirable height.

If this hole is the only vent the hive affords during the winter season, it should, I believe, be near the top of the lower hive body, so as to provide an escape for moisture as well as a passageway for the bees. If another vent is afforded for moisture, the hole in the front of the hive should be farther down on the lower hive body so as to avoid carrying off too much of the valuable heat of the cluster.

If the packing box is used it is just as important to provide a second entrance for the bees as in an unpacked hive. The single bottom entrance of a packed hive can become blocked as readily as any other.

Saugerties, New York.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

CHOICE white clover honey in new 60's. Noah Bordner, Holgate, Ohio.

EXTRA QUALITY clover extracted. Howard Grimble, Holcomb, N. Y.

CHOICE light clover honey in new 60's. George M. Sowarby, Cato, N. Y.

WHITE AND AMBER extracted honey. Harry T. Gable, Romulus, N. Y.

FANCY clover honey, case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FINE clover honey, case or car. Leslie A. Davis, R. R. 2, Union City, Ind.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

WHITE CLOVER honey, extracted, in 60's. J. Franklyn Stoner, Attica, Ohio.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

CLOVER COMB HONEY, No. 1 to Fancy white comb. Louis Regner, Swea City, Iowa.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

CLOVER HONEY in sixties and comb honey. George Eykamp, 1221 Akin, Evansville, Indiana.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

FINE CLOVER extract in glass or tin. Earl Alexander, 2521 Fleming Road, Middletown, Ohio.

FINEST white clover extracted, liberal discount at our place, by truck. N. B. Querin, Bellevue, O.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

EXTRACTED clover and amber honey. Quotations on request. Scott Traxler, Scottsburg, N. Y.

FINE QUALITY new clover honey in new cans. Case or quantity. Scott's Honey Farm, La Grange, Ind.

HARRIS'—Fancy clover extracted, new crop, in new sixties. Case or carload. J. N. Harris, Saint Louis, Mich.

FOR SALE—1940 crop, white clover extracted honey in 60-lb. cans. L. S. Griggs, 711 Avon St., Flint, Mich.

MICHIGAN White Extracted in 60's. Strictly high grade in new cans. M. H. Hunt & Son, Lansing, Mich.

COMB No. 1, weight clover $3. No. 2, $2.50 per case of 24 sections, six and eight case carriers only. Extracted clover in 60's, 6c. Discount on honey taken from our door. H. G. Quirin, Bellevue, Ohio.

WHITE extracted and amber, also few cases of white honey in shallow frames. Herman Crowther, Cass City, Mich.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

FANCY white clover extracted honey, can or carload. Price on request. Sample 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

WHITE CLOVER COMB, $3.00 case; amber, $2.50; clover extracted, 7c; amber, 6c; buckwheat, 6c. C. B. Howard, Geneva, N. Y.

LET US show you how you can save on your honey purchases. We also buy honey. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

FOR SALE—Fine clover honey, extracted in 60-pound cans. Satisfy yourself. Sample for the asking. W. S. Earls, New Canton, Ill.

NEW CROP clover-basswood honey, water white in new cans. Send for sample and price. A. A. French & Son, Theresa, N. Y.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

SELECT LOTS white sweet clover, also processed white honey in 60-pound tins. A. I. Root Co., 224 West Huron Street, Chicago, Ill.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

40 TONS white clover extracted honey, case, ton or carload. Write for prices and sample. LEROY C. KEET, 1003 Leray Street, Watertown, N. Y.

NUMBER ONE buckwheat honey, free from wax and foam, new 60's. 1-10 cases, 6½c, over 10, 6 cents. F.O.B. Woodward Apiaries, Clarksville, N. Y.

NO. 1 to fancy light comb honey, $2.75 per case; No. 2 and amber, $2.25; in window cartons, 25c extra. Extracted, 6c in 60's. H. R. Shelton, Parma, Mich.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

FANCY WHITE TUPELO HONEY—Fast becoming recognized as America's outstanding health sweet. Mild delicate flavored. Never granulates. Your purchasing direct from reliable producer assures you finest of quality for less money. Fred Hoffman, Apalachicola, Florida.

XUM

Stover's--The House of Quality

Package Bees

Three-banded Italians
and Caucasians
Produced to please you

QUEENS of both races reared in separate locations bred to fill those hives with bees.

Hives and Supplies

All outside parts of our hives are made of Cypress, which defies decay; frames and inside fixtures of Western Pine.
Write for Literature.

THE STOVER APIARIES
MAYHEW, MISSISSIPPI

ITALIAN QUEENS

Shipped same day order is received.
1, 50c; 6, 45c; 12 or more, 40c

CITRONELLE BEE CO.
Citronelle, Alabama

STREAMLINING THE TOP ENTRANCE

(Continued from page 683)

the hives and about eighteen inches of straw on top without paper or other covering. This amount of straw on top absorbs lots of thaw moisture without much danger of wetting the hives. I have used oat, barley, and rye straw and found rye much superior as it holds its shape perfectly in any kind of weather. (Wheat straw is similar to rye and may be as good.)

As to the possibility of colonies becoming too warm during winter with only a top entrance opening I think there is no more danger than with only a bottom-board opening.

Junius, South Dakota.

LIGHT AMBER GOLDENROD honey at 6c per pound. AMBER fall at 5c. The Vik Apiaries, Independence, Ohio.

STOLLER'S excellent quality clover. Honey packed in 60's. Finest obtainable, ready for shipment Write Stoller Honey Farm, Latty, Ohio.

RASPBERRY HONEY blended with milkweed honey, two of the best honeys of Northern Michigan. Packed in 60-lb cans, for 7c a lb. In 10-lb. cans for $2.00. We pay postage. Sample for 20c. Elmer Hutchinson & Son, Lake City, Michigan.

OUR 1940 CROP of Michigan clover honey is now ready for the market. New cans and cases. Let us supply you with your requirements during the coming season. E. D. TOWNSEND & SONS, Northstar, Michigan. The center of the Clover belt.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O D. terms except when the buyer has thoroughly established his credit with the seller.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

WHITE and light amber extracted and comb honey. George Eykamp, 1221 Akin, Evansville, Indiana.

WANTED—White clover honey. New cans only Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WANTED—Carlots honey; state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

HIGHEST cash returns made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Ky.

WANTED—White clover and amber extracted honey, any quantity. Write or call. Mizerny Meat & Poultry Company, Toledo, Ohio, Main 1174

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Michigan.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies, both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich

FOR SALE

35 CASES used tins in wood, 35c case. Frank Tinari, Bethayres, Pa.

QUEENBEE PAINTING outfits $1.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

ROOT'S 4-frame automatic reversible extractor in good condition Best offer claims it. H. M. Jones, Cary, Ills.

CUT COMB HONEY—Cartons and equipment. Get our prices on everything for cut comb honey. James Hilbert, Traverse City, Michigan.

FOR SALE—40 new winter cases, sectional, 3/4" lumber for Jumbo or Langstroth. 2 hives to case, $1.50 each. R. E. Cook, Renwick, Ia.

27 HIVES, supers, combs, guaranteed disease free, extracting equipment, $75.00, also Cletrac caterpiller, $250.00. R. Diem, Park Falls, Wisconsin.

ATTRACTIVE prices on bee supplies and comb foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. E. S Robinson, Mayville, N. Y.

CARTONS for cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

BEES AND QUEENS FOR SALE

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

GOOD ITALIAN QUEENS. White Pine Bee Farms, Rockton, Pa.

WRITE for prices on Bees and Queens. Graydon Bros., Rt. 2, Greenville, Ala.

THREE-BANDED Italian queens, 50c each, select. Alamance Bee Company, Graham, N. C.

60 CENTS EACH—for bright three-band Italian queens. NOVEMBER price. D. W. HOWELL, Shellman, Georgia.

FOR SALE—300 10-fr. 1½ and 2 story colonies of bees. Bees guaranteed free from disease. W. A. Wiley, West Point, Miss.

CAUCASIAN QUEENS, untested 40c each until Nov. 1st. Safe arrival. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

ITALIAN QUEENS. N. J Experiment Station stock, selected, carefully reared, 75c each. Circular. E. G. Carr, Pennington, N. J.

GOOD PACKAGE BEES AND QUEENS are profitable. You can't beat ours for quality and production. Used for years by leading beekeepers of the U. S. and Canada. A trial order for 1941 will show you how really good package bees can be. Write me now, stating how many packages you may need and I will send you full information. Then, if you wish, we can get your order straightened out and the shipping date reserved before the busy season. Young pure three-banded Italians. Select young laying queens of our own production No drones. No disease. H. C. Short, Fitzpatrick, Ala.

EXTRACTOR WANTED

WANT 20 to 30 frame extractor with pump. Must be in perfect condition and reasonable. R. Lidge, 2050 Grace St., Chicago, Ill.

York's Package Bees and Queens

Quality Bred Italians More for Your Money

Queens, 50 cents each; ten up, 40 cents each. Two-pound packages with queens, $1.60 each; ten up, $1.50 each; three-pound packages with queens, $2.10 each; ten up, $2.00 each. Prompt shipment.

Book orders now for shipping dates wanted. Full weights, safe arrival and satisfaction guaranteed.

York Bee Company

Jesup, Georgia, U. S. A.

(The Universal Apiaries)

TOO LATE TO CLASSIFY

TUPELO HONEY, new 60's and barrels, 5 and 10 lb buckets. Marks Tupelo Honey Co., Apalachicola, Fla.

CHOICE clover honey. Case $6.60; also light amber honey $6.00 case. Martin and Fuller Apiaries, Owosso, Mich.

HONEY WANTED—Carloads and truckloads for our Oklahoma plant. Could use a truckload of shallow frame comb honey. Old Taylor Honey Co., Harlan, Iowa.

TALKS TO BEEKEEPERS

(Continued from page 717)

why change to some other method which perhaps might not fit conditions, in your locality? Perhaps I am too conservative but if I try out any method in honey production, wintering, introducing queens, or what not, I like to try it out on a few colonies and not in a wholesale manner. If it proves better than my present method, then I adopt it. If we keep open-minded for **Truth** with respect to the application of beekeeping principles and if at the same time we manage to keep one foot on the ground we are likely to make some progress in beekeeping.

QUICK SERVICE
Dependable Selected
ITALIAN
Queens
THE PUETT COMPANY
Hahira, Ga.

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descriptive circular on any magazine listed.

MORE PROFIT . . . MORE PLEASURE will be yours if you receive each month the publication that caters to your hobby or special interest.
These magazines keep you informed, give you ideas, put you in touch with others who have the same interest that you have. All are monthlies.

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.50 Sou. Calif. Rancher
1.00 The Pacific Fancier
.75 American Farm Youth
1.00 American Bee Journal
1.00 Beekeepers' Item
1.00 Gleanings in Bee Culture
1.50 American Pigeon Journal
1.00 American Rabbit Journal
1.00 Small Stock (rabbits, cavies, etc.)
.50 Rabbit Monthly (comm.)
1.00 Standard Rabbit Journal
1 00 American Fur Breeder
2.00 Amer. Natl. Fur & Market Journal
1.00 Belgian (Horse) Journal
.50 Dairy Goat Journal
1.00 Angora (Goat) Journal
2.00 Goat World
1.00 Hog Breeder (all breeds)
.50 Spot. Poland China Bulletin
1 00 Amer. Hampshire Herdsman
1.00 Sheep Breeder
1.00 The Sheepman
.50 Wool Sack (wool growers)
1.00 Milking Shorthorn Journal
1.00 American Cattle Producer

Rush your order today. All orders are acknowledged by return mail and your subscription is started at once. Send check, money order, bill, coin or stamps.

SEND NO MONEY: Send us your order on a postcard and we will bill you for it if you prefer.

MAGAZINE MART
Dept. GB La Grange, Ill.

MAGAZINES

DAIRY GOAT JOURNAL, Dept. 419, Fairbury, Nebr. (big monthly magazine, 3 years $1), gives complete information. Introductory 5 months, 10c.

MICHIGAN BEEKEEPER. The State Bee Magazine with a National Circulation. 75c a year, 2 years $1. MICHIGAN BEEKEEPER, R.F.D. 3, Lansing, Mich.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly 7c6d. Apply Editor, Indian Bee Journal. Jeolikote, Dist. Nainital, U. P India.

MANY beekeepers have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto 2, Ontario.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

COLORED PICTURES of poultry and common poultry diseases supplement valuable information which enables you to increase profit. Six months, 10c; two years, 25c. American Poultry Journal, 567 South Clark, Chicago.

HELP WANTED

WANTED—Reliable apiary worker, must be familiar with disease and capable to work 2000 colonies with two helpers. All year round position. State wages expected, age, experience, references, etc., in first letter. Use Transpacific Airmail, Hawaiian Honey Co., Ltd., Ewa, Hawaii.

We thank our many customers for a nice business and for patience when we were sometimes unavoidably late. Owing to bad weather it has been a hectic season.

We still offer queens at 50c for 1-11, 45c for 12-23, 40c for 24-49 and 35c for 50-up. Cash with order, safe arrival guaranteed.

Our best friends are satisfied customers.

MORLEY PETTIT, Tifton, Georgia

QUEENS
Italians of Quality
50c; 12 or more 40c.
JOHN G. MILLER
723 C St., Corpus Christi, Texas

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

MICHIGAN MEETING

(Continued from page 697)

Michigan State College, at East Lansing. Himself a beekeeper and an instructor in beekeeping he has championed the cause of beekeeping in his state as perhaps no other leader has done in any state since the days of Hutchison, Heddon, Hilton, and Hunt.

The bee meetings, both for summer and winter, are always well attended but back of them and almost out of sight is the untiring worker and guiding genius, Kelty.

The pictures given here are representative of the activity and interest at all the meets.

First, we have the large picture of the meeting held at St. Lorenz Grove, Frankenmuth, on Aug. 1st. Of all the field meets I attended last summer this was the largest, (and the picture does not show all who came).

The next picture beginning at the top left shows the group in session with the speaker in the distant front at the speaker's stand.

The Michigan Honey Harmonizer Band is made up of the nephews and nieces of Elmer Carroll, editor of the Michigan Beekeeper. Their ages range from six to eighteen years. These children know how under the leadership of the oldest sister (her back to camera) to turn out good music. The little six-year-old could whirl her baton to the time of the music.

Next is L. S. Griggs, the only one whose picture I could get at the speaker's stand, because it was a very dark day. He is one of the large producers of the state. Once when I visited him I saw how his hives were piled up six and seven stories high. Asked how he was going to get his honey down from those skyscrapers, he sardonically remarked, "If the bees put it there I'll find a way to get it down".

The automobiles shown at the Indian River State Park just before the meeting shows little groups of beekeepers here and there. These groups are much in evidence in the next set of pictures. It is in these groups where individual problems are discussed.

In the lower right can be seen A. G. Woodman and at his right, his son Baxter. In the bottom picture, the interior of the Jaquays' honey house, can be seen a Woodman honey extractor and in the foreground a revolving turntable to hold the combs just before they go into an extractor.

For Over 50 Years

Beekeepers in many lands have been pleased with this most important tool in Beekeeping. Your Bingham Smoker is offered for sale by numerous dealers. **INSIST ON THE BEST** Manufacturers of a complete line of Honey Extractors, one for every requirement. Send for printed matter.

A. G WOODMAN COMPANY
GRAND RAPIDS, MICH.

Queens

Our Imported Strain of Italian Bees has again demonstrated their superior wintering and honey producing qualities.

Requeen now with our select young queens to insure better results next year. Prices 1-10, 50c each; 11-25, 45c each; 26-up, 40c each.

Rossman & Long
Box 133, Moultrie, Ga.

No More Queens for this Season

Thank you for the business sent us and your wonderful cooperation. Booking orders for bees and queens for 1941.

BOLLING BEE CO., Bolling, Ala.

A Good Rule to Go By

Buy your Italian bees and queens from

ALABAMA APIARIES
Mt. Pleasant, Alabama

2-lb. package with queen	$2.00
3-lb. package with queen	2.50
Queens	.65

Carniolan Queens

Carniolans lead in honey production, in economic use of winter stores, spring colony development, and amiable disposition. Our Own Strain.
EPHARDT'S HONEY FARMS
Torras, Louisiana

To Friends of American Honey Institute:

What! Ho! November is here!

And that means the honey crop is off the hives and we can figure our crop in cans, cases or pounds. Perhaps even in Dollars and Cents if markets are right.

The annual meeting of allied beekeeping industries was held at Omaha on the 22, 23, and 24th of October. A good time and program was promised by the committee in charge and we are sure that it all came true.

At Omaha, the Institute staff headed by Mrs. Grace gave its annual report of activities. Have you been reading them in the Institute News Notes in each issue of the Journal? We hope you had the pleasure of being at Omaha to enjoy the convention including Mrs. Grace's splendid report on the various ways in which honey publicity was promoted during 1940 and plans for 1941.

Thanks to honey producers and allied interests everywhere, the Institute is on a sound financial basis. The small staff at Madison can work efficiently without fear of having a "closed shop". Are you doing your bit and have you sent in your 1940 membership as yet?

Why not send your Institute membership dues in now in order that your name may be included in the 1940 report of Who's Who in American Honey Institute? It will also help the Institute Directors to make definite plans for Institute activities in 1941.

Your support of a good cause is appreciated by all of your fellow cooperators. In case you have forgotten—$1.00 per ton—or as you see fit. You are the judge. Let's do it now and keep on doing it.

V. G. Milum,
Chairman of Finance Committee
American Honey Institute

HAZEL-ATLAS

HONEY JARS

H-A on a honey jar means especially designed for the honey packers' requirements. Crystal clear and designed to sell, they display the beauty of your product. Ample label space and easy packing make them highly desirable from a practical standpoint.

UPPER LEFT...

THE NEW BEEHIVE LINE

Light in weight with more label space than ever before. Available in ½ lb., 1 lb. and 2 lb.

LEFT...

HONEY PAILS

Illustrated is the 5-lb. container. Real utility handle makes this pail a favorite with housewives. Also available in 2½ lb.

HAZEL-ATLAS GLASS CO.

WHEELING, W. VA.

Write for free samples

XUM

Package Bees and Queens for 1941

Write for prices.

THE CROWVILLE APIARIES
WINNSBORO, Rt. 1, La.

We discontinued all shipping June 10th and will use the remainder of the season for making preparations for our 1941 business.

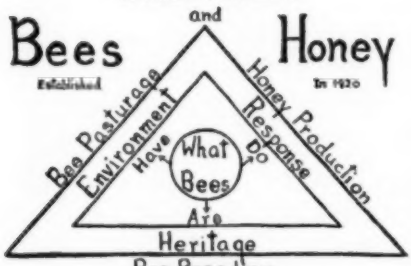
CAUCASIAN APIARIES
Brooklyn, Ala.

THREE-BAND ITALIAN QUEENS

—Price—
Young laying queen, 35c each.

W. O. Gibbs
Phone 150. Willacoochee, Ga.

FRONTIER



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Since 1918

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Featuring Triple Phases of **Bee Life**
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with regular Departments devoted to each phase—
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Bee Pasturge—
Honey Production and Utilization
Published monthly, $1.00 the year
circulating "From Coast to Coast"
Sample Copy Free
RALPH BENTON, Editor
Rivera, California

ON THE CAUSE OF EFB

(Continued from page 690)

a clue as to why Italian bees are so much more resistant to EFB than the German. It is possible that the Italians have been exposed to the disease for generations and the susceptible strains killed off, while the German bees have had very little contact with it.

The source of tuberculosis as a "low-resistance" disease among human beings acts somewhat as follows. As long as the individual has an adequate diet and sufficient rest, even though TB germs are present in his system, they will not affect his health; but if the individual lacks an adequate diet and sufficient rest, his resistance to the disease will be lowered and it may in time prove fatal. The individual who has never been in a region where there were "open" TB cases, cannot have any of the germs in his body, and though he is existing on the poorest kind of diet and receives little rest, he will not contract tuberculosis, simply because both of the necessary factors to produce the disease are not present.

The above may apply in the same way to bees. As long as they have an adequate diet (proper and sufficient pollen) they might be loaded with the bacillus alvei (or pluton) and still not succumb to European foulbrood. But if their diet is lacking. their resistance becomes lowered, the disease gains a foothold, and proceeds to destroy them.

In closing, this theory concerning the sources of European foulbrood can be summed up as follows, the bacillus is the **primary cause,** and a deficient pollen supply is the **secondary cause.** Either one alone is relatively harmless, but when they occur together the disease invariably appears.

Selma, California.

"She-suits-me" queens, 3-banded Italians, most excellent strain: One queen, 75c, 3 queens, $2.00. Stamps accepted for single queen.

Koolairy veil, $1.50 postpaid, SAFIN queen cage, $1, for ten; 15c for one.

ALLEN LATHAM
Norwichtown, Conn.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

CARNIOLANS
CAUCASIANS

The 1940 queen-rearing season has come to an end. We again thank our many customers for the past season's patronage. We are preparing for better queens and bees and for more business next season. Ask for our free paper about these races.
ALBERT G. HANN, Glen Gardner, N. J.

We thank you for the splendid business that you gave us this season. If you were pleased tell others. If not, tell us.

WEAVER APIARIES
Navasota, Texas

BETTER-BRED QUEENS **Three-banded Italians**

Send us your name and let us place you on our mailing list and be among our many satisfied customers for 1941.
CALVERT APIARIES, CALVERT, ALABAMA

We Still Have Queens

However, it is time to think of Package Bees for next Spring. Write us. We guarantee not to delay your orders. Remember our record. No delay of any orders for the past six consecutive years.
GARON BEE COMPANY **Donaldsonville, La.**

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF MARCH 3, 1933, OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, FOR OCTOBER 1, 1940.

State of Ohio, County of Medina, ss.:

Before me, a Notary Public in and for the state and county aforesaid, personally appeared E. R. Root, who, having been duly sworn according to law, deposes and says that he is the Editor of Gleanings in Bee Culture, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of— Post office address—
Publisher, The A. I. Root Co., Medina, O.
Editors, E. R. Root and M. J. Deyell, Medina, Ohio.
Business Manager, M. J. Deyell, Medina, O.

2. That the owner is: (if owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The A. I. Root Co., Medina, Ohio; Belva M. Demuth, Medina, Ohio; Kate Gunkleman, R. F. D. No. 4, Medina, Ohio; J. T. Calvert, Medina, Ohio; H. H. Root, Trustee A. I. Root Estate, Medina, Ohio; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; R. I. Bostwick, Seville, Ohio; Alan I. Root, Medina, Ohio; Trustees Profit Sharing Fund, Medina, Ohio.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state). None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given: also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is (This information is required from daily publications only.)

E. R. ROOT, Editor.

Sworn to and subscribed before me this 1st day of October, 1940.

HAROLD C WEST, Notary Public.
(My commission expires Mar. 27, 1943.)

XUM

Honey Jars
by Foster-Forbes
AVAILABLE IN THE FOLLOWING SIZES
NO 756 - 5 OZ HONEY - 43 #/M
NO 757 - 6 OZ HONEY - 43 #/M
NO 755 - 8 OZ HONEY - 48 #/M
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